Intragroup Conflict and Conflict Management Approaches as Determinants of Team Performance and Satisfaction: Two Field Studies

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Abstract

The effects of intragroup conflict and conflict management on team outcomes were analyzed in two empirical studies with a multilevel approach. In the first study, 68 production teams from eight industrial companies were surveyed. In the second study, we analyzed 77 workgroups from 14 companies. Hierarchical regression analysis was computed to test the hypotheses at the team level, and hierarchical linear modeling was conducted to test the hypotheses at the individual level. The results revealed a negative impact of task conflict on team effectiveness and a positive effect of integrating. No moderator effects were found. Our results, being similar in both studies, come out against the importance of the type of task on the relationship between conflict and team outcomes. Furthermore, our findings suggest that reducing intragroup conflict and providing team members with the abilities to manage conflict cooperatively is a way to increase group performance and team members' satisfaction.

Conflict is one of the main topics to understand the dynamic and functioning of teamwork (DeChurch & Marks, 2001). Although its effects on group effectiveness have been studied and discussed extensively, these complex relationships have not been fully developed and many inconsistencies persist (De Wit, Greer, & Jehn, 2012). In fact, whereas some researchers advocate the need to minimize conflict to obtain higher levels of effectiveness (e.g., De Dreu & Weingart, 2003b), others suggest that when conflict is related with the task—task conflict—in certain circumstances, it may be positively related to group outcomes (e.g., Amason, 1996; De Wit et al., 2012; Jehn, 1995).

Two important meta-analyses were conducted in this area, and the results are not convergent: De Dreu and Weingart (2003a, 2003b) found that both task conflict and affective conflict (i.e., disagreements about interpersonal issues) generally have a negative effect on group outcomes; in contrast to De Dreu and Weingart's results, more recently, De Wit et al. (2012) found a more complex picture, revealing that the effects of task conflict on group outcomes are dependent on the correlation between the two types of conflict: the type of team analyzed and the outcome considered (task conflict and group performance were more positively related among studies where the correlation between the two types of conflict was weak, in studies conducted among top management teams, and where performance was measured in terms of financial performance or decision quality). The authors emphasized the importance of continuing the research of theoretically relevant moderators of the conflict–outcomes relationship, namely studying conflict management which, despite its importance in this context, has received little empirical attention. The present studies respond to this recent call. Therefore, the first objective of our studies,

which are focused on organizational teams, is expanding the existing literature on the effects of conflict management as a moderator of the relationship between conflict and effectiveness, which is mostly based on academic samples (e.g., Gross & Guerrero, 2000; Tekleab, Quigley, & Tesluk, 2009) or focused on one type of conflict (e.g., Benítez, Medina, & Munduate, 2011; De Dreu & Van Vianen, 2001). Besides the analysis of conflict management as a moderator of the relationship between conflict and results, we are also interested in studying its direct effects on effectiveness. DeChurch, Mesmer-Magnus, and Doty (2013) argued that the manner in which people interact regarding their conflicts is a more proximal mechanism for explaining team outcomes and affective reactions than conflict states (affective and task conflict). Moreover, being a process that is under the team's control, its study is crucial when the focus is on improving team functioning in real organizations (Mello & Delise, 2015).

De Wit et al. (2012) have also suggested that future research on conflict would benefit from taking a more multilevel view of intragroup conflict. In fact, both the team as a whole and the individuals may be affected by team conditions and team processes, such as intragroup conflict and conflict management (Ilgen & Sheppard, 2001). Consequently, understanding the implications of team processes on team effectiveness requires taking into account team- and individual-level outcomes. However, the bulk of research has focused on team-level outcomes (e.g., Goncalo, Polman, & Maslach, 2010; Liu, Fu, & Liu, 2009; Van Woerkom & Van Engen, 2009), and little attention has been given to the implications of intragroup conflict on the individual level, for example, on team members' affective reactions such as satisfaction and well-being. Therefore, the second objective of our studies is to address this gap by examining, empirically, the direct and interactive effects of conflict and conflict management on two criteria of team effectiveness: The first is at the group level—*team performance*—and the second at the individual level—*members' satisfaction with the team*.

Following De Dreu and Weingart (2003a) and De Wit et al. (2012), we recognize that the nature of the tasks executed by team members can affect the way conflict and conflict management influence team effectiveness. Thus, the third objective of our studies is contributing to the study of the role played by the type of team on the relationships between conflict, conflict management, and effectiveness. To reach our goals, two independent studies were conducted involving teams in organizations. In the first study, we analyze the direct and interactive effects of conflict and conflict management on team performance. In the second study, our central objectives are the same, but the field of analysis is expanded. Thus, since intragroup conflict affects both the team as a whole and the individuals, two criteria of effectiveness, from different levels of analysis, are considered: team performance, related to the team as a productive unit— economic dimension of team effectiveness; members' satisfaction with the team,[1] concerning the quality of the experience for the individuals, as team members—social dimension of team effectiveness (Beaudin & Savoie, 1995). In the first study, under our analysis are teams that perform routine and noncomplex tasks—production teams—whereas in the second study, we analyze teams that develop nonroutine tasks —design teams and top management teams.

The studies reported were conducted in Portugal. Since national cultural values influence the way individuals interpret and react to intragroup conflict (Cai & Fink, 2002), the cultural background of the team is a variable to consider in order to thoroughly understand conflict and its effects (Oetzel & Ting-Toomey, 2003). Therefore, the present work extends the conclusions of the work developed in this area, mostly based on North American samples, to a different cultural context. Portugal is characterized as a collectivist society in the commonly used individualism–collectivism dimension of cross-cultural research (Hofstede, 1983). People in individualist cultures (such as North American) tend to view them-

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[1]The two studies reported in this article were not conducted simultaneously, but in successive years. Thus, when the first study was conducted, our focus of analysis was on performance indicators (based not only on perceptions but also on team output reports). The development of the second study was based on the need to deepen knowledge about intragroup conflict (a) analyzing, on one hand, its effects in teams that perform complex tasks, and (b) taking into account, on the other hand, an outcome variable concerning the affective system. It was for this reason that satisfaction was not measured in the first study.

selves as independent of collectives and give priority to their personal goals over the goals of others. Collectivists, by contrast, see themselves as part of one or more collectives (family, coworkers, tribe, nation) and tend to give priority to the goals of these collectives over their own personal goals (Triandis, 1995). Consequently, conflict in collectivistic societies tends to be viewed as a threat because it challenges the equilibrium and in-group relationships.

Considering conflict as negative, avoiding conflict, or even denying its existence, appears to be the most commonly used strategy in collectivistic cultures, whereas individualistic cultures favor more confrontational approaches (Ting-Toomey, 2005). Do these differences between cultures lead to different results concerning the relationship between team conflict, conflict management, and team outcomes? Beyond the main objectives presented above, the present studies try to make a contribution to this question.

Conflict in Organizational Teams

Conflict can be defined as a disagreement that is perceived as creating tension at least by one of the parties involved in an interaction (De Dreu & Weingart, 2003a). The definition presented includes three essential characteristics of a conflict situation: interaction, disagreement, and perception of tension (Barki & Hartwick, 2004).

Over the years, researchers have been trying to understand how conflict affects team outcomes (see Amason, 1996; Jehn, 1994, 1995; Passos & Caetano, 2005; Peterson & Behfar, 2003). Much of this research is based on the distinction between task-related conflicts and relationship-based conflicts (called affective or relationship conflicts; Jehn, 1994, 1995) and on the theoretical idea that while the former can be productive, the latter are harmful (Amason & Sapienza, 1997; Simons & Peterson, 2000; Van de Vliert & De Dreu, 1994). However, as De Dreu and Weingart (2003b) noted, empirical results are not so conclusive, namely with respect to the effects of task conflict. In fact, results of almost all studies found negative correlations between task conflict and team performance (e.g., Janssen, Van de Vliert, & Veenstra, 1999; Porter & Lilly, 1996; Thatcher, Jehn, & Zanutto, 2003) or found a nonsignificant relation (e.g., Jordan & Troth, 2004; Passos & Caetano, 2005) rather than the expected positive effect. Recently, De Wit et al. (2012) conducted a meta-analysis with 116 studies on intragroup conflict and concluded that the effects of task conflict on team outcomes are less negative (or even positive) as compared to affective conflict and that these effects depend heavily on the presence of different moderating factors, namely task type, co-occurrence of conflict types, and organizational level of the teams.

In addition to considering moderators of the relationship between task conflict and team outcomes, some authors have proposed that to clarify the functionality-dysfunctionality of task conflict, it is necessary to consider its intensity and frequency.

Jehn (1995), as well as De Dreu (1997) and Walton (1969), suggested that there is an optimal level of task conflict above or below which individual and group performance diminishes. When conflict intensity is high, team energy and attention are moved to the resolution of disputes, resulting in decreases in team effectiveness and efficiency. On the other hand, low levels of task conflict lead to inactivity and avoidance, individuals become conformists, different ideas are not presented, and, as a consequence, team outcomes suffer. Jehn noted, however, that this inverted U-shaped relationship between task conflict and performance occurs only when groups are performing nonroutine tasks.

In this way, integrating the above-mentioned research, with respect to the relationship between conflict and performance, the following hypotheses can be proposed:

Hypothesis 1: Affective conflict has a negative impact on team performance.

Hypothesis 2a: In groups with routine tasks, task conflict has a negative effect on team performance.

Hypothesis 2b: In groups with nonroutine tasks, at low or high levels of task conflict, task performance is worse than at moderate levels of task conflict.

Conflict, despite being related with the task or with relations, is associated with the emergence of tension and opposition between the parties. Thus, even if a conflict can be advantageous to group performance, the usual individual reaction is dissatisfaction (De Dreu, Dierendonck, & Dijkstra, 2004; Ross, 1989). Therefore, the following hypotheses can be formulated:

Hypothesis 3: Affective conflict has a negative impact on members' satisfaction with the team.

Hypothesis 4: Task conflict has a negative impact on members' satisfaction with the team.

Conflict, Conflict Management and Team Effectiveness

In accordance with the conflict literature, the influence that conflict has on the team dynamic is not independent from the way conflict is handled by team members (Lovelace, Shapiro, & Weingart, 2001). At the intragroup level, conflict management strategies describe the responses of team members to conflict situations (DeChurch & Marks, 2001; Pruitt & Rubin, 1986).

Several conceptualizations of conflict management strategies appear in the literature. Many of these are, however, quite similar because the research in this domain is built upon Blake and Mouton's (1964) typology of management styles.

Rahim and Bonoma (1979) distinguished five styles of handling interpersonal conflict that emerge from various combinations of two dimensions—concern for self and concern for others: avoiding (low concern for self and low concern for others), dominating (high concern for self and low concern for others), obliging (low concern for self and high concern for others), integrating (high concern for both self and others), and compromising (midpoint of both the others-oriented and self-oriented dimensions).

This study focuses on integrating and dominating strategies of handling conflict[2]. Although the contingency approach indicates that there is no best way to respond to conflict, several studies developed with the purpose of measuring how particular ways of handling intragroup conflict influence team effectiveness have suggested that integrating is the most constructive way to manage conflict, and evidence has been found for the positive effect of this type of strategy on team satisfaction (e.g., DeChurch & Marks, 2001) and on team performance (e.g., Alper, Tjosvold, & Law, 2000; Kuhn & Poole, 2000).

Following this, concerning the direct relationships between integrating and team outcomes, we predict that

Hypothesis 5: The use of the integrating strategy of handling conflicts has a positive impact on group performance.

Hypothesis 6: The use of the integrating strategy of handling conflicts has a positive impact on members' satisfaction with the team.

Contrary to integrating, where cooperative goals are emphasized, the dominating strategy of conflict handling is viewed as a win–lose struggle—if one wins, the other has to lose (Rahim, 1992). The adoption of this type of conflict response easily locks parties into an escalation of conflict, contributing negatively to team functioning and team effectiveness (De Dreu & Van Vianen, 2001; Van de Vliert, Nauta, Giebels,

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[2]This study is part of a larger study where avoiding and obliging were also analyzed. In line with Friedman, Tidd, Currall, and Tsai (2000), we omitted compromising because it is not really a distinct style, but rather constitutes half-hearted integrating. We decided not to report the results of avoiding and obliging because both variables were uncorrelated with the other variables of interest.

& Janssen, 1999). Findings from prior research have shown empirically these negative relationships (e.g., Behfar, Peterson, Mannix, & Trochim, 2008; Friedman et al., 2000; Pneuman & Bruehl, 1982). In a study with top management teams from the telecommunication sector, Liu et al. (2009) found some intriguing results concerning the effects of dominating. In fact, based on a sample collected in a collectivistic society, the authors reported that dominating did not affect team outcomes but was positively related to firm performance, suggesting the need to develop more studies in this area.

Given the above-mentioned research, although there are some contradictory results, we expected that dominating will have a negative impact on the outcomes of the organizational groups that are the object of our analysis, so we hypothesize the following:

Hypothesis 7: The use of the dominating strategy of handling conflicts has a negative impact on group performance.

Hypothesis 8: The use of the dominating strategy of handling conflicts has a negative impact on members' satisfaction with the team.

In the current studies, we intend also to examine the interactive effects of intragroup conflict and conflict management in predicting the performance and members' satisfaction of work groups. In fact, we expect that the effects of intragroup conflict on team outcomes will be dependent on the way conflict is handled by team members. This is in line with De Dreu and Weingart's (2003a) contingency theory of task conflict and performance and also with Jehn and Bendersky's (2003) Conflict-Outcome Moderated Model. Integrating has been presented as a prerequisite for conflict to become productive or at least not unproductive, while dominating has been related to an escalation of negative conflict effects (Weingart & Jehn, 2000). There is some empirical evidence for the moderator effect of conflict management on the relationship between task conflict and team outcomes (see De-Church & Marks, 2001; Liu et al., 2009; Lovelace et al., 2001), but most studies conducted analyze the direct effects.

The moderator role of conflict management on the relationship between affective conflict and team outcomes has been less studied (with some exceptions, for instance, Benítez et al., 2011; De Dreu & Van Vianen, 2001). However, it is likely that managing affective conflicts through dominating will escalate conflict because contending behaviors are quickly reciprocated by even stronger responses by others (Pruitt & Carnevale, 1993). On the other hand, it is expected that, regardless of the type of conflict that is at issue, the use of an integrating approach to conflict can result in stronger interpersonal relationships, and better and richer understanding of each other and of the issues under debate, which can lead to more productive and satisfied groups.

Considering what was said above, we expect that the intensity of the negative relation between intragroup conflict and the group outcomes will diminish when groups manage their conflicts with an integrative approach and will increase when a dominating strategy is used. Therefore, the following hypotheses can be formulated:

Hypothesis 9: The effects of intragroup conflict (task conflict and affective conflict) on team performance will be moderated by integrating strategies such that negative effects will be eliminated or weakened.

Hypothesis 10: The effects of intragroup conflict (task conflict and affective conflict) on members' satisfaction with the team will be moderated by integrating strategies such that negative effects will be eliminated or weakened.

Hypothesis 11: The effects of intragroup conflict (task conflict and affective conflict) on team performance will be moderated by dominating strategies such that negative effects will be strengthened.

Hypothesis 12: The negative effects of intragroup conflict (task conflict and affective conflict) on members' satisfaction with the team will be moderated by dominating strategies such that negative effects will be strengthened.

Study 1

Method

Participants and Procedure

The sample of this study is constituted by production teams from industrial companies. In accordance with Devine's Integrative Taxonomy of Organizational Workgroups (2002), *production teams* are groups of frontline employees, who produce tangible outputs in a routine, continuous fashion using relatively advanced technology.

In the first step of the data collection, a letter to different companies from the manufacturing sector was sent, where the purpose of the study was explained. Eight companies agreed to participate in this study. Meetings with a member of the company's top management team (in general, the human resources manager) allowed us to identify the teams to survey. In each team, we had to collect information from two sources: the team members' questionnaires and the team leader's questionnaire. Team members were surveyed about intragroup conflict and about conflict management; team leaders were asked to evaluate the team in a set of performance indicators[3]. The data were collected in the organization by a member of the research team. Individual anonymity was ensured, and it was emphasized that the data would be aggregated before feedback would be provided.

Surveys were administered to 437 members of 68 production teams. Four hundred and fifteen members returned their surveys, but 33 were excluded from our sample because at least 10% of the answers were missing (Bryman & Cramer, 2004). After these initial procedures, the remaining sample had 382 participants, members of 64 teams (in all teams, at least 60% of the team members completed the questionnaire). Teams were constituted, on average, by eight members ($SD = 4.26$).

With respect to the leaders' surveys, all 68 questionnaires delivered were returned and considered valid.

Measures

To assess the variables considered for our study, we developed two measures—the Intragroup Conflict Assessment Scale (EACI—Escala de Avaliação do Conflito Intragrupal) and the Group Performance Assessment Scale (EADG—Escala de Avaliação do Desempenho Grupal)—and we adapted items from the Rahim Organizational Conflict Inventory-II (ROCI-II—Rahim, 1983). In the development of the measures (in both the first and the second study), an effort was made to strictly follow the recommendations of Friedman and Amoo (1999) and also Netemeyer, Bearden, and Sharma (2003), concerning, for instance, the clarity of the items and of the response alternatives, the connotations of the category labels, the number of points of the scale.

Intragroup Conflict Assessment Scale. The Intragroup Conflict Assessment Scale measures the frequency of task and affective conflicts in teams. Past research on intragroup conflict usually employed the Intragroup Conflict Scale (ICS) developed by Jehn (1994). For two reasons, however, we decided to design an alternative measure. First, in line with De Dreu and Van Vianen (2001), we consider ICS items too general and poorly discriminative. The items developed to assess affective conflict, for example, almost all

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[3]Initially, we also intended to collect team output reports to measure team performance. Unfortunately, some of the companies did not have this kind of information, and although others had, the information was very different and difficult to compare.

relate to emotional states such as friction and tension (e.g., "How much tension is there among members in your work group?"). However, the two kinds of conflict, and not only affective conflict, are characterized by the presence of tension (Barki & Hartwick, 2004). Jehn, Greer, Levine, and Szulanski (2008) recognized this limitation in Jehn's instrument. Second, authors are not in accordance about the number of items to use and concerning the items' formulation and, over the years, different versions of ICS have been used (see, for instance, Jehn, 1995; Janssen et al., 1999; Simons & Peterson, 2000; Van Woerkom & Van Engen, 2009).

To address these issues, intragroup conflict was measured by asking team members to rate how often they perceived tension in a team to be due to the presence of (1) personal differences between team members, (2) disagreements related to the distribution of work and responsibility, (3) disagreements between team members related to personality differences, (4) differences about values and attitudes, (5) different opinions about the work being done, (6) disagreements about the content of the decisions, (7) different ideas about team rules and goals, (8) disagreements related to the role each member has in the development of tasks, and (9) differences in the way each member relates to the others. Items 1, 3, 4, and 9 measure affective conflict ($\alpha = .82$), and the remaining items measure task conflict ($\alpha = .87$). All items are answered on a 7-point Likert scale, ranging from 1 = *never* to 7 = *always*.

Group Performance Assessment Scale.   The Group Performance Assessment Scale measures different issues related to the quality and quantity of work produced by the teams. In the construction of the present scale, existing scales were taken into account (e.g., Alper et al., 2000). Information was also gathered from organizations to understand how performance was measured in this kind of groups. Eight items were then developed that cover different aspects related to performance. Leaders were asked to rate, on a 10-point Likert scale, ranging from 1 = *poor* to 10 = *excellent*, their team's performance on the following issues: (1) care in the use of tools and machinery, (2) accomplishment of the production levels established, (3) quality of the work developed, (4) presentation of suggestions, (5) respect for the modus operandi, (6) assiduity, (7) respect for the job post (cleanness; organization), and (8) accomplishment of the deadlines established.

An exploratory principal component analysis (PCA) with the eight items developed for measuring performance was conducted. Due to the fact that only the team leaders answered this scale, the size of this sample ($N = 68$ leaders) was too small to use confirmatory factor analysis (Kline, 2005). The PCA returned a one-factor solution, explaining 54% of total variance ($\alpha = .87$). All item loadings were higher than .55.

Conflict Management.   To measure integrating and dominating strategies of handling conflicts, we adapted eight items of ROCI-II (Rahim, 1983) (four items for each of the constructs). All items were reworded to reflect the group, rather than the individual, as the referent. Participants were asked to rate, on 7-point Likert scales, ranging from 1 = *never* to 7 = *always*, the way team members usually react when they face conflict situations. The four integrating items were as follows: "Try to integrate their ideas to come up with a decision jointly," "Try to find a solution to a problem that satisfies the expectations of all members," "Try to bring all concerns out in the open so that the issues can be solved in the best possible way," and "Try to work jointly for a proper understanding of the conflict situation" ($\alpha = .85$). Items for dominating were as follows: "Use personal influence to get their ideas accepted," "Use authority to make a decision in their favor," "Use expertise to make a decision in their favor," and "Sometimes use personal power to win a competitive situation" ($\alpha = .73$).

Results

Preliminary Analyses

Confirmatory Factor Analysis (CFA) was conducted to evaluate the convergent and the discriminant validity of the constructs assessed by team members. The fit of a one-factor model (Model 1) was com-

pared with the fit of the theoretical four-factor model (Model 2). Both models had significant chi-square values ($\chi^2 < 0.001$), but the chi-square difference test indicates a significant improvement of Model 2, $\Delta\chi^2(6) = 1022.05$, $p < .001$. Moreover, Model 2 presented adequate values of comparative fit index (CFI = .94) and root-mean-squared error of approximation (RMSEA = .06), whereas Model 1 values for CFI (.53) and RMSEA (.16) were outside of acceptable levels (Byrne, 2001). All the indicators loaded acceptably on their predicted factors (above .50), indicating convergent validity (Kline, 2005).

In this study, the unit of analysis was the group rather than the individual and, as a result, individual responses were aggregated to the team level. To justify aggregation, we computed the average deviation index (AD_M Index) developed by Burke, Finkelstein, and Dusig (1999). Following the authors' recommendations, we used the criterion $AD_M \leq 1.17$ to aggregate, with confidence, individual responses to the team level. The application of this criterion resulted in the exclusion of 13 teams in further analysis. Additionally, to check whether aggregation was justified, eta-squared statistics, which indicate whether individuals within the same team are more similar than individuals who are in different teams, were computed. For task conflict, affective conflict, integrating, and dominating, the eta-squared statistics were .30, .25, .43, and .24, respectively. All those exceed Georgopoloulos' (1986) minimum criterion of .20. Additionally, we computed the intraclass coefficients ICC(1) and ICC(2) (Bliese, 2000). ICC(1) for task conflict, affective conflict, integrating, and dominating was .15, .10, .15, and .07, respectively. ICC(2) for these variables was .52, .39, .51, and .32, respectively. Although ICC(2) for affective conflict and for dominating is slightly below the values recommended (Klein & Kozlowski, 2000), overall the statistics computed tend to support aggregation of the data to the team level.

Because different teams within several organizations were sampled, ANOVAs, with organization affiliation as the independent variable and the variables under analysis as the dependent variables, were conducted to check whether there was a systematic difference between these organizations. Results revealed no significant differences between organizations respecting task conflict, $F(8, 42) = 1.84$, $p = .09$; affective conflict, $F(8, 42) = 1.80$, $p = .10$; integrating, $F(8, 42) = 1.76$, $p = .11$; dominating, $F(8, 42) = 0.93$, $p = .50$; and team performance, $F(8, 42) = 1.62$, $p = .15$.

Table 1 gives the means, standard deviations, and intercorrelations for all variables.

Hypotheses Testing

To test our Hypotheses 1, 2, 5, 7, 9, and 11 (the other hypotheses were not tested because, in this study, we did not consider team satisfaction), we conducted a hierarchical regression analysis with team performance as the dependent variable (Table 2). In the first step, we entered the two dimensions of intragroup conflict; in the second step, we entered the two strategies of conflict management; and in the third step, we entered the interaction terms. In this way, the impact of intragroup conflict on team performance (Hypotheses 1 and 2) was analyzed using step one and the direct effect of conflict management on team performance (Hypotheses 5 and 7) was analyzed using step two, so that the amount of intragroup conflict was controlled. The joint impact of intragroup conflict and conflict management (Hypotheses 9 and 11) was examined using step three results.

Table 1

Means, Standard Deviations, and Correlations for All Study Variables—Study 1

	M	SD	1	2	3	4	5
1. Affective conflict	2.73	0.66	–				
2. Task conflict	2.90	0.74	.80**	–			
3. Integrating	4.86	0.61	.08	.27	–		
4. Dominating	2.53	0.64	.42**	.45**	.15	–	
5. Performance	7.43	1.07	−.28*	−.38**	.28*	−.27*	–

Note. *p < .05. **p < .01.

Table 2

Hierarchical Regression Analysis with Intragroup Conflict and Conflict Management Predicting Group Performance—Study 1

Variables	B	SE	R^2	ΔR^2
Step 1				
Affective conflict	0.15	0.36	.15*	
Task conflict	−0.66*	0.32		
Step 2				
Affective conflict	0.49	0.34	.35**	.20**
Task conflict	−0.98**	0.31		
Integrating	0.82**	0.22		
Dominating	−0.27	0.22		
Step 3				
Affective conflict	0.46	0.39	.38**	.03
Task conflict	−0.97**	0.39		
Integrating	0.91**	0.24		
Dominating	−0.20	0.25		
Affective conflict × Integrating	−0.04	0.53		
Task conflict × Integrating	0.16	0.69		
Affective conflict × Dominating	0.78	0.76		
Task conflict × Dominating	−0.33	0.67		

Note. *$p < .05$. **$p < .01$.

In order to correct the multicollinearity that can arise when testing moderated relationships, the independent variables were centered before the interaction terms were generated, following a procedure proposed by Cohen, Cohen, West, and Aiken (2003).

Analysis of the first step reveals that task conflict and affective conflict explain, jointly, 15% of the variance of the dependent variable. As can be seen in Table 2, affective conflict did not have a negative impact on team performance, and consequently, we did not find support for our first hypothesis ($B = 0.15$, $SE = 0.36$, $p = .68$). The relationship between task conflict and performance was negative and statistically significant ($B = −0.66$, $SE = 0.32$, $p = .04$), as we predicted in Hypothesis 2a. After controlling the effects of intragroup conflict, the addition of conflict management strategies, in the second step, added significant variance to team performance ($\Delta R^2 = .20$, $p < .001$). Since integrating presented a significant positive effect on team performance ($B = 0.82$, $SE = 0.22$, $p < .001$), we find support for Hypothesis 5. The negative impact on team performance of a dominating strategy of handling conflicts was not significant; thus, we did not find support for Hypothesis 7. The analysis, in the third step of the interaction terms, shows that both integrating and dominating did not moderate the relationship between intragroup conflict and team performance.

Study 2

Method

Participants and Procedure
In this study, the focus of our analysis falls upon teams that perform highly complex tasks in industrial and service companies. The teams analyzed can be classified, in accordance with Devine's Integrative Taxonomy of Organizational Workgroups (2002), into two types: design teams and executive teams. Design teams are brought together with the purpose of developing a new product or service that requires a great level of innovation and creativity. Executive teams, in turn, have the central

function of coordinating the work performed by other teams or departments and, usually, consist of members from different functional areas.

The procedure used to identify and select the companies for our research was similar to the one used in the first study, and 14 companies agreed to participate in our second study (13 of whom are from the information technology sector).

In each team, we collected information from two sources: the team members' questionnaires and the team leader's questionnaire. Team members were surveyed about intragroup conflict, conflict management, and team satisfaction; team leaders were asked to evaluate the team via a set of performance indicators.

The data collection procedures were the same as in the first study. A total of 405 members from 89 teams participated in this study (60% were design teams). Three hundred and forty-three participants returned their surveys, but 23 were excluded from our sample because of missing data. The effective sample size was, after these preliminary procedures, reduced to 321 participants, members of 77 teams (in all teams, at least 60% of the team members completed the questionnaire). Teams were constituted, on average, by seven members ($SD = 4.60$).

Regarding the leaders, from the 89 that were surveyed, 81 returned valid questionnaires.

Measures

To assess the variables under analysis, we used two measures that were developed or adapted for the first study and that have already been described—the Intragroup Conflict Assessment Scale to measure task conflict ($\alpha = .85$) and affective conflict ($\alpha = .83$) and ROCI-II (Rahim, 1983) to measure integrating ($\alpha = .90$) and dominating ($\alpha = .86$) strategies of handling conflict. To measure members' satisfaction with the team, we used the Group Satisfaction Scale (Lourenço, Dimas, & Rebelo, 2014), and for team performance, the Group Performance Assessment Scale-II (Lourenço et al., 2014) was used. The last two scales are described below.

Members' Satisfaction with the Team.   The Group Satisfaction Scale is composed of seven items that measure members' satisfaction with different aspects related to the task and the affective system of the team: team functioning, team climate, relationships between team members, the role that each member has in the team, the way the leader organizes and coordinates the team activities, relationship between team members and the leader, and results achieved by the team (Lourenço et al., 2014). Statements are evaluated on a 7-point Likert scale ranging from 1 = *totally dissatisfied* to 7 = *totally satisfied* ($\alpha = .91$).

Group Performance Scale.   Due to the differences in the tasks developed by the teams, group performance was measured with a different scale from the one used in the first study. In fact, the nature of the tasks must be considered when we are assessing performance, because the criteria that are important to one type of teams are not the same when the characteristics of the teams change (De Dreu & Weingart, 2003a). Therefore, group performance was assessed with the scale developed by Lourenço et al. (2014). This scale is composed of ten items that measure the leaders' perception regarding different issues related to the quality and quantity of work produced by the team: (1) ability to adequately address the problems, (2) ability to develop strategies to achieve the goals, (3) quality of the work produced, (4) efficiency in the development of tasks, (5) quantity of work produced, (6) quality of the new ideas or suggestions introduced, (7) ability to implement new ideas, (8) accomplishment of the deadlines established, (9) number of new ideas or suggestions presented, and (10) ability to react when facing unpredictable situations. The response scale was constituted by 10 points (1 = *poor*, 10 = *excellent*). For the same reason already presented in Study 1, PCA was used instead of CFA. The solution resulting from the PCA was composed of one dimension explaining 54.6% of total variance. All items presented loadings higher than .60 ($\alpha = .88$).

Results

Preliminary Analyses

To evaluate the convergent and discriminant validity of the constructs assessed by team members, we tested with CFA a measurement model with the five measures (task conflict, affective conflict, integrating, dominating, and satisfaction) as separate constructs (Model 2). Using chi-square difference tests (Byrne, 2001), we compared the fit of this model with the fit of a one-factor model (Model 1). Both models had significant chi-square values ($\chi^2 < 0.001$), but the chi-square difference test indicates a significant improvement of Model 2, $\Delta\chi^2(10) = 1343.66$, $p < .001$. Moreover, Model 2 presented adequate values of CFI and RMSEA (CFI = .92, RMSEA = .07), supporting an acceptable fit of this model to the data, contrary to Model 1 (CFI = .65, RMSEA = .14). All the indicators loaded acceptably on their predicted factors (above .50), indicating convergent validity (Kline, 2005).

As in the first study, individual responses were aggregated to the team level. To justify aggregation, we computed the AD_M Index (Burke et al., 1999) and we used $AD_M \leq 1.17$ as a cutoff criterion. The application of the AD_M Index led to the exclusion of one team in further analysis. Eta-squared statistics for task conflict, affective conflict, integrating, and dominating were .49, .43, .39, and .42, respectively, and all of them exceeding Georgopoloulos' (1986) minimum criterion of .20. Additionally, values of ICC(1) and ICC(2) were calculated for each one of these variables. The values of ICC(1) are similar to what is found in the research literature (Bliese, 2000): .34, .25, .20, and .23 for task conflict, affective conflict, integrating, and dominating, respectively. ICC(2) for the same variables was .68, .57, .50, and .54, respectively. This means that the different scales intended for this study are acceptable on a group level.

Due to the fact that teams stem from various organizations, we tested, through ANOVAs, the possible effect of organization affiliation. Results revealed no significant differences between organizations with respect to task conflict, $F(13, 60) = 1.29$, $p = .25$; affective conflict, $F(13, 60) = 1.31$, $p = .22$; integrating, $F(13, 59) = 1.23$, $p = .27$; dominating, $F(13, 59) = 0.94$, $p = .52$; satisfaction, $F(13, 59) = 0.70$, $p = .75$; and performance $F(13, 55) = 0.78$, $p = .67$.

Descriptive statistics and correlations are given in Table 3.

Hypotheses Testing

To test our hypotheses, two different types of analyses were conducted: Hierarchical regression was conducted to determine the effects of the predictors on the team-level outcome analyzed (team performance), and hierarchical linear modeling (HLM) was computed to determine the effects of those constructs on the individual-level outcome under analysis (members' satisfaction with the team).

To avoid the multicollinearity problems that can arise when testing moderator relationships, the independent variables were centered (Cohen et al., 2003). The interaction terms were computed with the centered variables.

Table 3

Means, Standard Deviations, and Correlations for All Study Variables—Study 2

	M	SD	1	2	3	4	5	6
1. Affective conflict	2.77	0.65	–					
2. Task conflict	2.97	0.65	.67**	–				
3. Integrating	5.11	0.78	.55**	−.56**	–			
4. Dominating	2.77	0.81	.54**	.54**	−.50**	–		
5. Group performance	6.91	1.03	−.07	−.31**	.33**	−.25*	–	
6. Member's satisfaction	5.32	0.71	−.40**	−.67**	.56**	−.58**	.32**	–

Note. *$p < .05$. **$p < .01$.

Results concerning the team-level outcome and the individual-level outcome are presented separately in the next sections.

Team-Level Outcome Analysis

It was predicted in our Hypothesis 2b that task conflict could have a curvilinear relationship with team performance. To test this hypothesis, a hierarchical regression analysis was conducted with group performance as the dependent variable. In the first step, task conflict was entered, and in the second step, the squared term was entered. Support for our hypothesis requires the second step to be significant. As can be seen in Table 4, task conflict has a significant negative effect on group performance and explains 10% of this variable's variance. The addition, in the second step, of the quadratic term did not add explained variance to the dependent variables. Therefore, support was not found for Hypothesis 2b.

To test Hypotheses 1, 5, 7, 9, and 11, a hierarchical regression analysis with team performance as the dependent variable was conducted. In the first step, the two types of conflict were introduced; in the second step, the two conflict handling strategies; and in the third step, the interaction terms (see Table 5).

As can be seen in Table 5, affective conflict does not have a significant negative effect on group performance, so we did not find empirical support for Hypothesis 1 ($B = 0.30$, $SE = 0.14$, $p = .06$). After controlling the effect of intragroup conflict on the team outcomes, the addition, in the second step, of conflict management added explained variance on group performance ($\Delta R^2 = .08$, $p = .05$). As was predicted in Hypothesis 5, integrating presents a positive significant effect on group performance ($B = 0.31$, $SE = 0.14$, $p = .03$). The predicted negative effect of dominating on team performance was not significant. Therefore, we found partial support for Hypothesis 7. The analysis, in the third step, of the interaction terms reveals that conflict management does not moderate the relationship between intragroup conflict and team performance.

Individual-level outcome analysis. First, it is necessary to examine the intercept variability (γ_{00}) by estimating an unconditional means model (or null model). An unconditional means model does not contain any predictors but includes a random intercept variance term for groups (Bliese, 2009). If γ_{00} does not differ by more than chance levels, the assumptions of OLS regression techniques are not violated and there is no need for HLM analyses.

Results revealed that 31% of the variation in individuals' satisfaction score is a function of the group to which he or she belongs, ICC(1) = .31. Then, one must determine whether γ_{00} is significant by comparing the -2 log likelihood ($-2LL$) values between (1) a model with a random intercept and (2) a model without a random intercept. The $-2LL$ value for the model with the random intercept ($-2LL = 820.68$) was significantly smaller on a chi-square distribution than the model without the random intercept ($-2LL = 855.85$). Therefore, a model that allows for random variation in satisfaction among workgroups is better than a model that does not allow for this variation.

Table 4

Results from the Hierarchical Regression Analysis with Task Conflict Predicting Group Performance

Variables	Group performance				
	B	SE	β	R^2	ΔR^2
Step 1					
Task conflict	−0.46	0.17	−0.31*	.10*	
Step 2					
Task conflict	−2.88	2.63	−1.93	.11*	.01
Task conflict²	7.99	8.69	1.63		

Note. *$p < .05$.

Table 5

Hierarchical Regression Analysis with Intragroup Conflict and Conflict Management Predicting Group Performance—Study 2

Variables	Group performance			
	B	SE	R^2	ΔR^2
Step 1				
Affective conflict	0.30	0.15	.16**	
Task conflict	−0.53**	0.15		
Step 2				
Affective conflict	0.44*	0.16	.23**	.08*
Task conflict	−0.40**	0.16		
Integrating	0.31*	0.14		
Dominating	−0.10	0.14		
Step 3				
Affective conflict	0.53*	0.16	.30**	.07
Task conflict	−0.48**	0.17		
Integrating	0.27	0.16		
Dominating	−0.11	0.16		
Affective conflict × Integrating	0.27	0.15		
Task conflict × Integrating	−0.13	0.19		
Affective conflict × Dominating	−0.13	0.14		
Task conflict × Dominating	0.05	0.17		

Note. *$p < .05$. **$p < .01$.

The test results of Hypotheses 3, 4, 6, 8, 10, and 12 are given in Table 6 and discussed below.

The analysis of Model 2 showed the inexistence of a significant effect of affective conflict on member's satisfaction with the team ($B = -0.02$, $SE = 0.10$, $p = .88$) and revealed a negative significant effect of task conflict ($B = -0.69$, $SE = 0.10$, $p < .001$). Thus, support was found for Hypothesis 4, but not for Hypothesis 3.

The analysis of Model 3 revealed that, after controlling for the effects of intragroup conflict, integrating presented a significant positive effect on members' satisfaction ($B = 0.34$, $SE = 0.08$, $p < .001$), in

Table 6

Hierarchical Linear Modeling Results for Members' Satisfaction with the Team

Variables	Model 1 Coefficient (*SE*)	Model 2 Coefficient (*SE*)	Model 3 Coefficient (*SE*)	Model 4 Coefficient (*SE*)
Intercept	5.29 (0.07)***	5.26 (0.05)***	5.26 (0.05)***	5.28 (0.06)***
Affective conflict		−0.02 (0.10)	0.13 (0.10)	0.11 (0.11)
Task conflict		−0.69 (0.10)***	−0.54 (0.11)	−0.54 (0.12)
Integrating			0.34 (0.08)***	0.34 (0.09)***
Dominating			−0.01 (0.08)	−0.02 (0.09)
Affective conflict*integrating				0.03 (0.12)
Affective conflict*dominating				−0.08 (0.13)
Task conflict*integrating				−0.01 (0.12)
Task conflict*dominating				0.01 (0.16)
σ^2	0.56	0.56	0.56	0.56
γ_{00}	0.26	0.05	0.02	0.02
−2LL	820.68	771.47	760.27	769.66

Note. ***Individual-level sample size = 318 (nested in 76 workgroups). Unstandardized coefficients are reported with standard errors in parenthesis.

support of Hypothesis 6. On the contrary, the effect of dominating on the outcome under analysis was not significant ($B = -0.01$, $SE = 0.08$, $p = .91$). Thus, no support was found for Hypothesis 8.

Finally, the analysis of Model 5 showed the inexistence of moderated effects. Thus, no support was found for Hypotheses 10 and 12.

Discussion and Conclusions

Despite intragroup conflict being one of the most important organizational phenomena, the existent knowledge about intragroup conflict remains inconsistent, particularly with respect to its effects on team outcomes. With the present studies, our central aim was to contribute to clarifying the role of conflict in teams, analyzing the direct and interactive effects of intragroup conflict and conflict management on two outcomes from different levels of analysis: team performance and members' satisfaction with the team.

Moreover, by analyzing two distinct samples, it was our aim to understand how the variables under study would behave with teams that possess different characteristics, despite both performing in the organizational context. The major reason to not analyze these two types of teams in the same study relates to the indicators that were used to measure performance. As noted by De Dreu and Weingart (2003a, p. 153), "relevant indices of group performance can only be identified on an understanding of the specific group task (Steiner, 1972), thus different group tasks necessitate different performance measures." Yet, regarding team performance, it is important to note that two reasons justified the choice of the leader as the evaluator. First, in almost all organizations with performance assessment systems, the leader is the person designated to measure the performance of each collaborator. Secondly, one of the criteria of Hackman's definition of team effectiveness (1987) points to the evaluation of team performance made by the leaders; that is, a team is effective when team performance matches the standards of those who receive and review the team's outputs.

Contrary to our predictions, affective conflict was not a predictor of team performance and of members' satisfaction with the team. These results are similar to the ones found by Jehn (1995) and by Passos and Caetano (2005). From our perspective, the type of teams considered can provide us with an insight into clarifying these findings. We are studying, indeed, workgroups (and not social groups), with demanding targets to meet, as a result of which they are evaluated and, in some cases, rewarded. All groups have an affective and a task system (Emery & Trist, 1969). However, in formal organizational groups, the task (and then the task system) assumes great centrality—these groups are, in fact, created to perform tasks. In this way, in these groups, it is task conflicts that primarily threaten the quality of team outcomes. If our analysis focused on social groups, our results would probably be different.

Furthermore, these results, being similar to the ones found by Passos and Caetano (2005) (with a different instrument) in a sample collected in the same country (Portugal), may suggest the need to consider the context in order to understand the absence of a significant relationship between affective conflict and group outcomes. In fact, as has already been said, in collectivist cultures (such as Portuguese culture built upon a strong tradition of family), the priorities are group goals and needs more than the goals and needs of individuals. Preserving the equilibrium of intragroup relationships is the most important issue for group members. In that way, in relationship conflict situations—seen by group members as a threat to the above-mentioned equilibrium and also to group performance—group members, on behalf of the group harmony and faced with a need to produce, behave as if the conflict does not exist. The equilibrium is not disturbed, so the relationship conflict does not have a negative effect on team output.

Moreover, an intriguing result emerged concerning the effect of affective conflict on group performance: Despite the absence of a significant correlation between affective conflict and group performance (see Table 3), the direct effect found was positive and near statistical significance, and when conflict

management was considered in the model, the effect became significant (see Table 5). This result, which may be due to statistical reasons (in fact, a regression solution is extremely sensitive to the combination of variables that is included in it, because of the variance that is shared between the predictors) or may have a theoretical explanation (e.g., may indicate the presence of possible mediators), must be explored in further research and with a larger sample.

Concerning the effect of task conflict on team performance, our predictions in the first study—and because the teams considered developed routine tasks—pointed to a negative direct effect, whereas in the second study—where the teams analyzed developed nonroutine tasks—we hypothesized a curvilinear relationship. Our results revealed, nonetheless, that the effect of task conflict on team performance is linear and negative. Additionally, the effect of task conflict on members' satisfaction is also negative. In this way, independently from the type of teams considered, task conflict negatively impacts team outcomes at different levels: Teams with more task conflict have low levels of group performance, and members are less satisfied with the team.

Conflict is, in fact, often a negative experience, generating discomfort and displeasure. There is, in consequence, a tendency to negatively evaluate conflictual teams, which can justify, somehow, our results, because all measures used were perceptive. To be effective, a team must be perceived as effective by those who review and receive its results and the team experience must be positive to team members (Hackman, 1987). Our results are congruent with most of the results of the studies developed in this area that found that task conflict impairs both satisfaction and group performance (De Dreu & Weingart, 2003b; Liu et al., 2009; Lovelace et al., 2001; Passos & Caetano, 2005; Thatcher et al., 2003; Van Woerkom & Sanders, 2010). In general, our results are also in line with De Wit et al.'s (2012) findings. In fact, the authors verified that when performance was measured in terms of overall performance, which was our case, the relationship between task conflict and group performance was more negative compared with when it was measured in terms of decision-making quality or financial performance. The authors also identified a moderator effect of the co-occurrence of both types of conflict on the relationship between task conflict and performance: The stronger the correlation between task and affective conflict, the more negative the association between task conflict and performance (in both our studies, the correlations were strong). Finally, our studies are field studies and, as was identified by the authors, in this type of studies, task conflict is more negatively related to performance.

All in all, these results suggest that it is very difficult for an organizational team to be effective when conflicts are frequent. Recognizing the inevitability of conflict and its importance for finding better solutions, especially when tasks are complex, how can we interpret these results? Is there space for conflicts within groups? The answer to these questions leads us to the analysis of the direct effects of conflict management on team outcomes. Thus, as predicted, a positive significant effect of integrating on the team outcomes was identified. Managing conflict situations with a mutual gains approach, exploring the different alternatives to find an acceptable solution for all parties involved is, therefore, positive for task development and for team members' satisfaction. In this way, conflict in itself is not positive for effectiveness, but the strategies used by team members to deal with conflict can result in team gains.

Concerning conflict management, the predicted negative effect of dominating on team outcomes was not significant. In this way, it seems that managing conflicts through dominating is not so negative for team results as could be expected. However, more studies are needed to understand these results.

Finally, we did not find support for the moderator effects of conflict management on the relationship between the two types of conflict and team effectiveness. Therefore, the effect of intragroup conflict on performance is independent of the different levels of the moderator variables analyzed. Nevertheless, these results may be due to the small sample that was the object of our analysis. Thus, it is important to replicate this study with a larger sample.

Strengths, Limitations, and Further Research

The current study has several strengths. Foremost, the multilevel design adopted allows us to consider the effects of intragroup conflict on team outcomes from different levels of analysis: team performance, from the team level, and members' satisfaction with the team, from the individual level. Moreover, these complex relationships are analyzed in two distinct empirical studies with a main distinction between them: the nature of the tasks performed by the teams.

Clearly supporting the idea that task conflict is detrimental to team outcomes, no matter the level of the outcome considered nor the type of teams analyzed, the current article reinforces the results already found in the literature. Furthermore, in this article, a scale (with good psychometric qualities) was developed to measure intragroup conflict. Prior research had advanced the idea that the negative effects of task conflict on team outcomes might be caused by a measurement problem (De Dreu & Weingart, 2003a), since most of the research in this area relied on the scale developed by Jehn (1994, 1995). Indeed, another important contribution of our work is to highlight that the pattern of results obtained so far is unlikely to be related to measurement problems.

Finally, the results of our studies extend the conclusions of the work developed in this area to a different cultural context. The present studies were carried out in a southern European country, characterized as a collectivist society, and the results are, overall, very similar to those already found, thus reinforcing the literature. There is, however, an exception: the absence of significant relations between affective conflict and team outcomes. Although this was an unexpected result, it is important to note that it is consonant with the results found in the same culture by Passos and Caetano (2005). So our findings may suggest that, with respect to affective conflict, it is important to consider national values. Future research is needed to clarify these (non)relations.

As with most studies, the current research has several shortcomings. Our studies relied upon self-report measures and, as a consequence, run the risk of potential common method variance. However, our results were aggregated to the team level, a procedure that can attenuate this threat (Conway, 2002; Spector, 1987). Moreover, different sources were used in the assessment of the criterion variables (leaders and members). This option not only constitutes a strategy to diminish the effects of common method variance, but it also contributes to a more embracing and accurate diagnosis of team effectiveness.

The relatively small sample used in both studies may also limit some analyses (particularly, the moderator analyses) and also the generalization of the results.

The cross-sectional nature and nonexperimental nature of our research are barriers to stating the causal direction of the hypothesized relationships. To enrich the study of intragroup conflict, it is important to develop longitudinal studies in the future. Additionally, we believe that conducting case studies, where the dynamic nature of conflict situations can be evaluated over time with multiple methodologies, can contribute to a better understanding of intragroup conflict.

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