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Skewed Task Conflicts in Teams: What Happens When A Few Members See More Conflict than the Rest?

Abstract

Task conflict has been the subject of a long-standing debate in the literature – when does task conflict help or hurt team performance? We propose that this debate can be resolved by taking a more precise view of how task conflicts are perceived in teams. Specifically, we propose that in teams, when a few team members perceive a high level of task disagreement while a majority of others perceive low levels of task disagreement - i.e. there is positively skewed task conflict, task conflict is most likely to live up to its purported benefits for team performance. In our first study of student teams engaged in a business decision game, we find support for the positive relationship between skewed task conflict and team performance. In our second field study of teams in a financial corporation, we find that the relationship between positively skewed task conflict and supervisor ratings of team performance is mediated by reflective communication within the team.

Key words: teams, conflict, skewness, reflective communication

Skewed Task Conflicts:
What Happens When A Few Members See More Conflict than the Rest?

Task conflicts are defined as disagreements about task-related ideas and methods for accomplishing task goals (De Wit, Greer, & Jehn, 2012; Guetzkow & Gyr, 1954; Janssen, van de Vliert, & Veenstra, 1999). Task conflict has been shown to benefit team outcomes (e.g., Amason, 1996; Jehn, 1995; Nemeth, 1995) because it promotes deeper insight into tasks (Amason, Shrader, & Tompson, 2006), idea generation (De Dreu, 2006) and increased understanding and commitment to decisions (Olson, Parayitam, & Bao, 2007). At the same time, task conflict has also been shown to undermine team outcomes (e.g. Earley & Mosakowski, 2000; Lovelace, Shapiro, & Weingart, 2001), as task conflict can lead to cognitive overload (e.g., Carnevale & Probst, 1998), interpersonal conflicts (e.g., Greer, Jehn, & Mannix, 2008; Simons & Peterson, 2000), and stress among team members (Dijkstra, van Dierendonck, & Evers, 2005; Yang & Mossholder, 2004). A recent meta-analysis on intragroup conflict (De Wit et al., 2012) confirmed that task conflict may indeed be a double-edged sword, with task conflict enhancing team performance in some studies, but harming team performance in other studies.

The mixed findings for the effects of task conflict pose a challenge to understanding the role of task conflicts in the team setting. We argue that one explanation for the divergent findings in the field is the over reliance on the traditional view of task conflict as a shared property of the group that all members perceive similarly, and the reliance on compositional approaches to capture this collective phenomenon (e.g., Jehn, 1995; Olson et al., 2007). Compositional approaches to the operationalization of task conflict have led scholars to measure task conflict as a mean-based aggregate of individual-level perceptions of conflict in the team. However, scholars have begun to realize that consensus may well be the exception rather than the norm when it comes to collective team phenomena.

Accordingly, a growing line of research has begun to challenge the assumption that all team members may understand or experience team processes in the same way (e.g., Chan, 1998; Huber & Lewis, 2010; De Jong & Dirks, 2012; Jehn, Rispens, & Thatcher, 2010). These researchers argue that individuals can dramatically differ in how they view and participate in processes within their team, and that these perceptual and behavioral variations and patterns within teams offer more relevant insights for team performance than obtained by simply averaging across the potentially varied individual views that may exist within the team (Harrison & Klein, 2007; Moritz & Watson, 1998; Stewart, Fulmer, & Barrick, 2005). This perspective on teams requires a compilation approach, wherein one takes into account the more complex combinations and non-linear patterns of lower level individual perceptions in capturing the collective team phenomenon without assuming or requiring consensus among all (Bliese, 2000). Compilation does not assume isomorphism and allows for constructs to have a different meaning at the collective level than at the individual level (Bliese, Chan, & Ployhart, 2007). This approach is therefore better at capturing the lack of consensus in collective phenomena and provides insights into the configuration of cognitions at the team level. Indeed, in support of the compilation perspective, Jehn et al. (2010) propose and find that asymmetry (variation) in individual conflict perceptions within a team is a stronger predictor of group performance than mean-levels of conflict in the team.

In this work, we utilize a compilation approach to understand when task conflict is good or bad for team performance outcomes. We take the important notion of asymmetric conflict perceptions (Jehn et al., 2010) a step further and heed recent calls made by team and conflict scholars to systematically theorize about intragroup conflict as a configural property of the

group, where the shape of the distribution of member perceptions within teams may matter above and beyond that of the absolute variation of perceptions (DeRue, Hollenbeck, Ilgen & Feltz, 2010; Huber & Lewis, 2010; Roberson, Sturman, & Simons, 2007). We propose that specific patterns of conflict perceptions within teams carry substantial conceptual meaning that can explain and resolve past divergent findings that have emerged from the reliance on traditional mean- or variance-based operationalizations of task conflict. To this end, we introduce here the notion of *skewed conflict* in teams.

Skewed conflict in teams exists when there is a critical mass (majority bloc) of team members with certain conflict perceptions and a small proportion of members with the opposing perception. For example, in a five-member team, positively skewed task conflict exists when 3-4 members perceive no or low task conflict while 1-2 members perceive a high level of task conflict in the group. In negatively skewed task conflict, 1-2 members perceive low conflict while the majority perceives a high level of task conflict. The concept of skewed task conflict is distinct from minority dissent, which is said to occur when a few members publicly oppose the task ideas and procedures assumed by the majority (McLeod, Baron, Marti, & Yoon, 1997; De Dreu & West, 2001). The work on minority dissent is based on two basic assumptions (Asch, 1956; Nemeth & Wachtler, 1983): (1) the minority and majority are aware of their differing views; and (2) the minority actively promotes its position to influence the majority. In contrast, with positively skewed task conflict: (1) the majority perceives low task conflict and is not necessarily aware that a minority sees greater task conflict; and (2) the minority experiences different views without necessarily promoting those views to the majority. As such, positively skewed task conflict refers to the distribution of perceptions of task conflict among members of the team without further stipulating that team members are aware of these differences or that the minority attempts to influence the majority. Skewed task conflict could set the stage for minority dissent, but the concepts themselves are distinct.

In this paper, we develop and test theory on how skewed task conflict affects team performance and demonstrate how skewed task conflict is an emergent configural property of the group (Kozlowski, 1998, 1999; Morgeson & Hofmann, 1999) that explains additional variance in team processes and performance over and above mean and variance in intragroup conflict. To establish the conceptual foundation for our model, we develop theory to predict how skewed perceptions of task conflict may relate to team performance. We build upon motivated information processing theory (Nijstad & De Dreu, 2012) to propose that positively skewed task conflict perceptions facilitate reflective communication and superior group performance. By introducing the notion of conflict skewness into the team literature, we hope to move intragroup research forward by encouraging scholars to delve deeper into the pattern of processes within teams. Current theories on intragroup conflict do not address how different patterns and configurations of conflict perceptions within teams influence team dynamics. Our introduction of the notion of "skewed conflict" allows us to take into account the specific pattern of conflict perceptions within teams (Edwards, Klein, Shipp & Lim, 2003; Stewart et al., 2005) and to gain more precise understanding of the specific ways in which different patterns of conflict may affect team processes and outcomes.

In two studies, we investigate the relationship between skewed task conflicts and team performance. Our studies show that positively skewed task conflict explains variance in team performance above and beyond the effects of mean conflict level and the variance of conflict within a team, and is positively related to team performance outcomes. In the first study, we investigate the direct relationship of positively skewed task conflict with team performance in

MBA student teams at a top business school in India. In the second study, we investigate positive task conflict skewness among work teams of a multinational financial corporation in the Netherlands. In this study, we find that the relationship between positively skewed task conflict and supervisor ratings of team performance is mediated by reflective communication within the team.

Skewed Task Conflict and Group Performance

We know from past research that task conflict can have the potential to be healthy for team performance (e.g., De Wit et al., 2012). However, when task conflicts spiral out of control or transform into other types of conflict, such as relationship conflicts, the benefits of task conflict are quickly lost (e.g., De Dreu, 2006; Simons & Peterson, 2000). Therefore, understanding how task conflicts can be expressed in a way that provokes deeper information processing in a group without escalating into emotional conflict is critical. We propose that the ideal situation for such benefits of task conflict is when a positively skewed task conflict exists, where only a very small proportion of members perceive there to be a task conflict and most other members do not perceive there to be any task conflict in the team. However, capturing this exact configuration of conflict within teams requires a compilation approach that is different from what has been traditionally examined in past research. We therefore introduce here the notion of skewed task conflict and develop reasoning to suggest that positively skewed task conflict may be a desirable conflict pattern in teams which can facilitate reflective communication and thereby team performance.

We propose that positively skewed task conflict—wherein a majority of members perceive lower levels of task conflict in the group while a minority perceives higher levels of task conflict—is likely to create the optimum dynamics to enhance team performance. In such situations, irrespective of the overall level of conflict in the team, the minority member/s who perceives relatively higher task conflict is likely motivated to present divergent views in a careful, cooperative and politically sensitive manner, given their minority status and the relatively lower power that accompanies the state of being a minority. Indeed, research has shown that members who have low power in a situation (such as derived from being a numerical minority - Bettencourt, Charlton & Kernahan, 1997; Betterncourt, Miller and Hume, 1999; Farley, 1982; Sachdev & Bourhis, 1991; Tajfel, 1981) are more likely to engage in cooperative and conciliatory conflict behavior rather than competitive conflict behavior (e.g., Kim, 1997; Magee, Galinsky, & Gruenfeld, 2007; Pinkley, Neale & Bennett, 1994). When the minority member in a positively skewed conflict team presents his/her differing task views in a careful and cooperative manner, it is likely to help teams to have more open and productive task discussions on those differing ideas, as the discussion is most likely to be characterized by principles of constructive controversy (Johnson, Johnson, & Tjosvold, 2000). Constructive controversy occurs when members engage in reflective communication and cooperative intellectual discussion of perspectives rather than engaging in competitive debates and conflicts about divergent ideas in an environment of criticism and direct threat. In such situations, positively skewed task conflicts, compared to non-skewed task conflicts or negatively skewed task conflicts, are likely to promote reflective communication.

Inherent in our argument is that positively skewed conflict groups will be advantageous for team performance relative to negatively skewed conflict groups. While the absolute dispersion in conflict perceptions in a negatively skewed group may be similar to a positively skewed group, the configuration of conflict perceptions will be very different. In a negatively skewed group, the numerical majority of the group perceives higher conflict compared to a

minority that perceives lower conflict. This indicates that task conflict is "out in the open" and manifest among the majority of the group members. Such widespread conflicts are likely to be more contentious than isolated conflict perceptions in the team, and members are more likely to be defensive and argumentative (Jehn, Rispens, Jonsen, & Greer, 2013). This means that many group members are likely to spend considerable amounts of time and effort attending to or managing the overt conflict, as opposed to focusing on task performance. From a cognitive resources perspective (e.g., Carnevale & Probst, 1998), the effort taken by group members in a negatively skewed conflict group to manage overt conflict results in less effort on the team task.

Beyond comparisons to negatively skewed groups, if one compares the dynamics of positively skewed task conflict groups to other types of conflict configurations, such as when there is zero skew, there are also key differences evident. In a group that has low or zero skewness, there will not be a clear majority or minority sub-group, and therefore the dynamics outlined above for positively or negatively skewed teams will not manifest. When there is low or zero skewness, there can be many different possible patterns of perceptions within the team-ranging from all members perceiving high conflict to all members perceiving low conflict to other patterns wherein all members perceive individually distinct levels of conflict. In these three example patterns, the dynamics will differ and there will not be any consistent positive effect on communication processes. These differing patterns will not lead to the same level of motivating information processing as present in a positively skewed task conflict situation. Therefore, we propose that:

Hypothesis 1. Task conflict skewness is positively related to team performance, above and beyond mean level and variance in intragroup conflict, where positive skewness in task conflict is more beneficial than zero or negative skewness for team performance.

The Mediating Role of Reflective Communication

We propose here that the key process that explains how positively skewed task conflict relates to team performance is team reflective communication. We draw on research which suggests that team member configurations of perceptions are likely to influence the communication dynamics and processes in a team (Kozlowski & Chao, 2012; Morgeson & Hoffman, 1999), and that member heterogeneity on thoughts and attitudes is most closely related to information sharing and processing (Zohar & Tenne-Gazit, 2008). When understanding how positively skewed task conflict in particular impacts team performance, we identify team reflective communication processes as most relevant, given the constructive and careful way the minority members in positively skewed task conflict teams may present their viewpoints. Reflective communication is defined as the process of openly sharing ideas and reflecting upon those ideas and opinions (Gibson & Vermeulen, 2003; Walsh, Henderson & Deighton, 1988). When members engage in reflective communication, members in the group may introduce novel ideas, individually question underlying assumptions in proposed solutions and may engage in divergent thinking. Research on team learning and decision making indicates that reflective communication (Jelinek, 1979; Zenger & Lawrence, 1989) enhances group decision quality and thereby improves team performance (Gibson & Vermeulen, 2003).

We suggest that, when perceptions of team conflict are positively skewed, a carefully and constructively expressed differing opinion by the minority member can push the group to consider the alternative perspective, which entails greater reflective communication as members attempt to make sense of the differing view (De Dreu, Nijstad, & van Knippenberg, 2008) and reduces the chances of infighting and argumentation. We further propose that positively skewed conflicts in teams is likely to be associated with greater reflective communication as such teams

will have a majority bloc of team members who perceive little to no differences and conflicts on task ideas and thus are cohesive and provide an atmosphere that facilitates sharing and evaluating alternative ideas proposed by the minority member/s without the fear of being put down or feeling embarrassed or ridiculed (e.g. Ancona & Caldwell, 1992; Katz, 1982; Kramer, 1990; Schein, 1985; Williams & O'Reilly, 1998). The majority members who have non-contentious task communications (low task conflicts) in such a scenario are likely to feel a high sense of cohesion and will be able to move forward in their task decisions as they share a common mental schema. The majority who perceives low task conflict is better able to reflect on information shared and is more likely to seek and integrate such information, consider more alternatives, and experience a strong impulse to improve the situation (Brett, Shapiro, & Lytle, 1998; Van de Vliert & De Dreu, 1994). We therefore propose that, when task conflict is positively skewed in a group, there is more reflective communication and deeper, effortful ways of processing new ideas and novel perspectives (Chaiken & Trope, 1999). This open and reflective communication leads to better decision quality and higher team performance.

Hypothesis 2. The relationship between task conflict skewness and team performance is mediated by reflective communication.

Study 1

Study 1 examined the direct relationship between positive skewed task conflict and team performance. A complex corporate boardroom simulation study was conducted at a top business school in India, using a sample of 571 post-graduate students who were randomly assigned to 120 teams. The sample characteristics were as follows: 23% of teams had four members while 77% had five members; the average age was 27 years; mean work experience before joining the course was 4.85 years, and 70% percent of the subjects were male. The Chanakya business decision game (for more details, see Balaji & Dhillon, 2008) used for this study involved a virtual environment where student teams (representing the board of directors of a firm) competed with each other by making complicated business decisions (regarding strategy, finance, operations, and marketing for their respective firms) in response to a host of scenarios reflecting real-life industry events. Although the game itself was played in a virtual environment, team members engaged in real face-to-face discussions and responded about the dynamics of their teams' interactions. The students were briefed for about two hours about the rules of the game. The teams played four simulation rounds, each representing a quarter in the simulation environment, and each lasting 160 minutes in real time. The procedure for each round was the same. Team members spent each round discussing what they should do, and then submitted their decisions at the end of the stipulated time. The teams subsequently received their management reports, which contained information about their organizations' cumulative profit after tax apart from other metrics such as their market share and their relative standing in the industry. The data reported in this paper were collected as part of a larger data collection effort. In the subsequent sections, we discuss the measures and results relevant to our study.

Measures

Task Conflict. During the third round of the simulation, perceived task conflict was assessed using a modified version of Jehn's (1995) intragroup task conflict measure. The three items used were: "did people in your team have conflicting opinions about the team task", "were there disagreements about the task you are working on in your team", and "did people in your team disagree about ideas regarding the task" ($\alpha = 0.77$; ICC[1] = 0.22, $p < .01$). Participants responded to these questions on a five-point agreement scale (1 = *strongly disagree*, 5 = *strongly agree*). Three indices were computed from this data: mean, standard deviation, and skewness.

Skewness was computed using the following formula:

$$Skew = \frac{1}{N}\sum_{i=1}^{N}\left[\frac{x_i - \bar{X}}{SD}\right]^3$$

where x_i is the set of scores of the individual members in the group, $\bar{X}$ is the mean, SD is the standard deviation and N is the number of team members. Skewness is positive when the distribution has an asymmetric tail extending to the upper end of the scale and negative when the tail extends to the lower end of the scale.

Team Performance*:* Team performance was measured objectively by computing the total financial performance (cumulative profit after tax) made by the firm run by each team at the end of the third round of the simulation.

Control variables: Following past research (Jehn, Northcraft, & Neale, 1999; Jehn et al., 2010), we controlled for gender diversity, measured as the proportion of female members in the team. In addition, we controlled for age disparity as a representation of differences in experiences of team members. Lastly, we controlled for task conflict mean and variance, to verify that task conflict skewness predicts variation in performance above and beyond other conceptualizations of task conflict in teams (Jehn, 1995; Jehn et al., 2010; Olson et al., 2007).

Results

Descriptive statistics and correlations are as shown in Table 1. The bivariate correlations show that task conflict skewness was not correlated with task conflict mean (r = -.05, *ns*) or with variance (r = -.03, *ns*). In Hypothesis 1, we proposed a positive relationship between task conflict skewness and performance. Table 1 shows that task conflict skewness positively correlated with team performance (r = .29, p < .01). Results from the hierarchical linear regression, as shown in Table 2, also showed support for Hypothesis 1. Task conflict skewness was positively related to team performance (b = 2.91, p < .01), controlling for task conflict mean and variance.[2]

Supplementary Analyses. To verify that skewness signified the presence of a minority member who perceived conflict that differed markedly from that perceived by the majority, we examined the frequency distributions of the conflict perceptions in teams with different levels of skewness. We adopted the classification of high, medium, and low skewness based on the rules of thumb suggested by Bulmer (1979), as follows: (a) Scores less than -1.0 were classified as high negative skew; (b) scores between -1.0 and -.5 were considered moderate negative skew; (c) scores between -.5 and +.5 were considered low skew (i.e., symmetric); (d) scores between +.5 and +1.0 were deemed moderate positive skew; and (e) scores greater than +1.0 were regarded as high positive skew. Of the 120 teams in the sample, the numbers of teams with skewness that was high negative, moderate negative, low, moderate positive, and high positive were 23, 16, 35, 16, and 27 respectively. Three teams did not have sufficient data points to calculate skewness.

To illustrate the distributions of conflict perceptions for these five degrees of skewness, team-level frequency distributions from five exemplar teams are shown in Figure 1. When skewness is highly negative or highly positive, the distributions clearly show well-defined minority and majority blocs. When skewness is moderately negative or positive, the distributions are again asymmetric, but a clear minority bloc is not present. These distributions show that skewness reliably detects the presence of a minority bloc, usually a single member with an extreme perception of conflict, and a majority bloc of members with a relatively similar perception of conflict opposite to that of the minority.

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[2] We also tested for interactions between mean and skewed task conflict on team performance. The interaction term was not significant (b = 1.01, *ns*) and skewed task conflict remained significant (b = 2.82, p < .01).

To further support our argument that in positively skewed task conflict groups, the majority group of members are likely not aware and may not perceive task related differences with the minority member, we explored how each member perceived conflict with every other member. We asked each team member to rate the level of task conflict with every other group member. We then looked at the interpersonal conflict level of the minority member in a positively skewed conflict team and compared it with how the majority members viewed conflict with this particular minority member. We found that in groups with high positive skewed task conflict, the minority member had asymmetric conflict ties – wherein he/she rated task conflict (differences in task ideas) with other members (outgoing task conflict ties were more) while other members did not report task conflict with the minority member (incoming conflict ties were less). That is, the minority member had significantly less incoming conflict ties compared to his/her outgoing conflict ties (Mean difference between out-degree ties and in-degree ties for minority members in positively skewed task conflict teams was M= 1.09 $p < .01$; Mean difference for members in non-skewed teams was M= -.13, ns). Also, the minority member in a positively skewed conflict team actually had significantly less incoming conflict ties in general compared to other members – which indicates that most members in the group did not rate task conflict or perceive task related difference with the minority member (Incoming Conflict Ties: Minority member M = .34, SD = .58; Majority member M = .76, SD = .89; F= 10.57, $p < .01$, 95% CI of difference [-.65, -.19]). This data provides support for our notion that the minority member in a positively skewed conflict team perceives explicit differences in task ideas with other group members, however he/she is likely engaging in task interactions and disagreements in such a cooperative and careful manner, that majority of the members do not perceive this member as voicing dissent or having divergent views and therefore do not perceive overt conflicts with this person.

To verify the robustness of our hypothesized effect, we reran the regression model with past team performance as a lagged control. We found a significant effect of past performance on subsequent performance, although the hypothesized effect of task conflict skewness on subsequent performance remained significant (b = 2.19, $p < .01$). We also regressed task conflict skewness (Round 3) on past performance (Round 2) to test for reverse causality and found that past performance did not significantly predict subsequent task conflict skewness (b = .02, $p = .25$). Taken together, these results support the conclusion that skewed task conflict positively affected team performance above and beyond the effect of past team performance.

Study 2

Study 1 demonstrated a clear link between task conflict skewness and team performance. However, our study of interacting student teams lacked the realism of the organizational context (McGrath, 1982), and additionally, we were not able to explore the team processes that would help explain *how* skewed task conflicts relates to team performance. Therefore in Study 2, we aimed to expand our theoretical model and test the potential mechanism underlying the relationship between task conflict skewness and team performance in an organizational setting. We conducted a survey of 41 pre-existing workgroups (320 employee nested in divisions such as credit risk and control management, human resources, and the internal consulting units) of a multinational financial corporation with offices in the Netherlands. The average age was 30.92 years, and 45% of the participants were female. The data reported here were part of a larger data collection effort which tested relationships between other variables not used in the current study. These results have been published in past research articles (Greer, Caruso, & Jehn, 2011; Greer & van Kleef, 2010; Homan, Greer, Jehn, & Koning, 2010).

Measures

Task Conflict. Task conflict was measured on a 7-point scale (1 = *strongly disagree,* 7 = *strongly agree)* with three items similar to that used in Study 1 (α = .88; ICC[1] = .23, $p < .01$).

Reflective Communication. Reflective communication was assessed with a scale from Gibson and Vermeulen (2003). The scale had three items (e.g., "There is open communication in this team", "everyone has a chance to express their opinion", and "Team members maintain a high level of idea exchange"), and showed acceptable reliability (α = .76; ICC[1] = .18, $p < .01$). The inter-rater reliability ($r_{WG(j)}$) for reflective communication was 0.68.

Team Performance. Team performance was assessed via supervisor ratings of a three item performance scale (e.g., "I believe this team performs well at work"), which had good reliability (α = .84). Each team was assigned to and assessed by a unique supervisor.

Control variables: Similar to study 1, we controlled for gender diversity and tenure diversity. In addition, we controlled for team size as there was a wider variation in team sizes in this sample. Lastly, we also again controlled for task conflict mean and task conflict variance.

Results

Descriptive statistics and correlations for Study 2 are shown in Table 3. The results of hierarchical regression shown in Table 4 suggest that the direct main effect of task conflict skewness on team performance was not significant (b = .02, $p > .05$), but there was a significant positive effect of skewed task conflict on reflective communication (b = .20, $p < .01$)[3] and a significant positive effect of reflective communication on team performance (b = 1.00, $p < .01$)[4].

As there was no direct effect of task conflict skewness on team performance, we tested for indirect mediation to verify whether this relationship was being transmitted through the path of reflective communication. To test this indirect effect, we used the non-parametric bootstrap approach recommended by Preacher and Hayes (2008)[5]. We drew 5000 bootstrap samples and obtained a confidence interval for the indirect effect using the bias-corrected percentile method. The results provided support for Hypothesis 2 (See Table 5). Controlling for task conflict average and variance, task conflict skewness was positively associated with reflective communication (b = 0.17, $p < .05$), which was in turn positively associated with team performance (b = 1.14, $p < .01$). The indirect effect, computed as the product of these paths, was 0.19, and its 95% confidence interval did not contain zero [.02, .51], indicating that the mediation hypothesis was supported.

General Discussion

While researchers have often debated (see De Wit et al., 2012), and occasionally doubted (De Dreu, 2006), the merits of task conflict in teams, we, by adopting a more detailed view of the shape of the distribution of conflict perceptions in teams, find support for the benefits of task conflict for team performance. The introduction of the notion of task conflict skewness has potential for explaining and resolving past divergent findings that have emerged from the reliance on traditional mean-based operationalizations of task conflict. We find that teams in

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[3] We tested for interactions between mean and skewed task conflict on reflective communication. The interaction term was not significant (b = .11, *ns*) and skewed task conflict remained significant (b = .22, $p < .01$).

[4] We conducted a Hausman specification test using the two-stage least squares (2SLS) regression (Antonakis, Bendahan, Jacquart, & Lalive, 2010). The result of the test were not significant ($\chi 2 = .52$, p = .47), suggesting that the OLS regression model can be used to interpret the relationship between skewed task conflict and reflective communication without endogeneity and simultaneity concerns.

[5] The indirect (Preacher & Hayes, 2004) macro allows for adding multiple control variables. We used the indirect macro as we had to control for the mean and standard deviation of task conflict, apart from other control variables such as team size, tenure diversity and gender diversity.

which a minority of members perceive more conflict than the majority of other team members have higher levels of reflective communication and team performance. Importantly, we find that positively skewed task conflicts explains important additional variance in team performance above and beyond what has been explained in past research utilizing the mean and variance of conflict perceptions within the team. Our findings highlight that people in a group may think differently about conflict, and that this lack of consensus in perceptions about the group level of conflict is not merely error in measurement. Our studies show that the shape of the asymmetry in conflict perceptions within a team is indicative of a unique and conceptually meaningful team dynamic that relates to team performance. Task conflict skewness provides a more sophisticated picture of how differences in task ideas experienced by minority members may manifest in positive ways to influence reflective communication and overall team performance. The realization inherent from the results of this study is that mean team conflict (as traditionally used by compositional approaches to intragroup conflict) does not fully capture the different manifestations of task conflict dynamics in the group. Therefore the divergent findings regarding the effects of task conflict can be resolved by adopting a more nuanced understanding of the pattern of dyadic task conflicts in the group and how they might relate to different team processes such as information sharing and communication.

Team scholars and theorists have been urging researchers to develop a more nuanced understanding of team level dynamics and processes by exploring the magnitude and shape of within team dispersion of emotions, perceptions and behaviors (De Dreu et al., 2010; Roberson & Colquitt, 2005; Cronbach & Gleser 1953; Nunnally, 1995; Tabachnick & Fidell, 1989). While recent work on asymmetric conflict captures the absolute dispersion of perceptions of conflict, it does not directly speak to the *shape, or pattern*, of individual conflict perceptions in teams. However, our studies provide evidence that examining conflict using such a configural and compilation approach as advocated here–i.e. through the lens of the skewness of perceptions in a team–provides a more precise and predictive view of the mechanisms by which task conflicts can positively relate to team performance. Theoretically, we explicate the discontinuity in the idea of conflict across levels of analysis and show that skewness in conflict perceptions has unique relationships with team-level communication processes, as signified by reflective communication, that go beyond the effects of the mean and variance of conflict. We demonstrate how these team communication dynamics mediate the relationship between skewed task conflict and team performance. Methodologically, this paper explores the above questions on two independent samples, thus demonstrating the rigor and predictive validity of skewness as well as replicating the empirical findings across simulated and field settings studied over time.

Our introduction of the notion of skewness also offers interesting implications for the broader domain of research on team processes. Namely, skewness allows researchers to investigate the shape of the distribution of perceptions and the presence of majority and minority dynamics occurring in teams in ways that past conceptualizations were not able to capture. For example, researchers could investigate how skewness of intragroup voice, participation or knowledge sharing might influence group outcomes. Similarly, the effects of team emergent states, such as trust, have also often yielded contradictory results. Introducing the notion of skewness there might also allow researchers to obtain a deeper insight into these constructs than previous conceptualizations of these constructs have allowed.

Limitations and Future Directions

Our studies offer an important first look into the relationship between skewed task conflict and team communication dynamics and team performance. Although we observed a

direct positive relationship between skewed task conflict and objective financial performance in the first study, we did not observe this direct relationship in Study 2. This could be because we used an objective measure of team performance in Study 1 and a subjective supervisor-rated measure in Study 2. Although past studies have shown that objective and subjective measures are highly correlated (Bommer, Johnson, Rich, Podsakoff, & MacKenzie, 1995), misrepresentation of some aspects of performance in objective measures and contamination of irrelevant content in subjective measures could lead to differences in the effects of skewed task conflicts on objective and subjective team performance (Mesmer-Magnus & DeChurch, 2009).

Furthermore, in Study 2, the data was collected in an organizational context, and the lack of a direct relationship between skewed task conflict and performance seems to suggest that the positive outcomes of skewed task conflicts may be more immediate and higher temporal contiguity may be needed to detect the direct relationship. This could also explain why skewed task conflict was significantly related to performance in Study 1, where the existence interval of skewed task conflict (defined as the time needed for a given phenomenon to unfold; Zaheer, Albert, & Zaheer, 1999) matched more closely with the recording interval at which the phenomenon was measured (Kelly & McGrath, 1988). However, these inferences are purely speculative, and do indicate a limitation of our study.

Although our empirical results from two separate studies are consistent with and strongly support the theoretical model (ordering of variables) we specified, we would like to acknowledge that with the application of regression analysis, alternative models that specify different causal structures between variables are also potentially viable. Our supplementary analysis indicates the robustness of the relationship between skewed task conflicts and team performance when controlling for past performance. Nevertheless, we encourage future researchers to address the limitations mentioned above by conducting longitudinal cross-lagged studies on conflict perceptions, reflective communication, and team performance over shorter and repeated time-intervals and by examining both objective and subjective measures of performance within the same study.

Future research should also attempt to better understand who composes the minority member/s in skewed task conflict teams, and the impact that different people may have when falling into the role of the minority member in a positively skewed conflict team. Personality characteristics such as extraversion, agreeableness, and goal orientation could influence the way in which the minority member behaves in such situations. However, these personality characteristics could themselves be antecedents to the member's conflict perceptions being skewed. Therefore it would be interesting for future research to examine personality composition of the team as antecedents to skewed conflicts, and as moderators to the relationship between skewed conflicts and team outcomes. In addition, future research could examine how and when task conflict skewness profiles form and stabilize in teams. This can be done by using repeated measures designs and by exploring moderators of changes in task conflict skewness patterns in teams.

Another avenue for future research is to focus on how conflicts are expressed as opposed to the types, or topics, of conflicts. Some recent work has begun to examine how the manner in which conflicts are expressed can influence team outcomes (Weingart, Behfar, Bendersky, Todorova, & Jehn, 2014). Future work could adopt a rich social networks perspective to understand how centralization of conflict involvement patterns relate to skewed conflict in teams. Such work could also compare the effects of skewed task conflict and minority dissent in groups and can explore the various mechanisms by which skewed conflicts can influence team

outcomes. We encourage researchers to start exploring how a few individuals within the team (for example, minority members in a skewed conflict team as compared to all members) can substantially influence the team communication and decision making dynamics. Future research can also attempt to directly capture the cognitive and affective states of the minority members in positively skewed conflict teams to better understand the facilitators and inhibitors for their choice to voice their differing perspective versus to remain silent.

Conclusion

The notion of skewed task conflict offers a new and exciting way of investigating the relationship between task conflict, team processes and team performance. Task conflict skewness explains important and incremental variance in team outcomes above and beyond the variance explained by previously examined statistical moments, such as the mean or variance of member perceptions. Importantly, we find that task conflict skewness is positively related to performance, as early theory on task conflict would have predicted, but ensuing research based on the mean and variance of conflict failed to support.

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Table 1

Study 1: Means, Standard Deviations, and Correlations among Study Variables

	Variables	Mean	Std. Dev.	1	2	3	4	5
1	Age Diversity	.10	.06	--				
2	Gender Diversity	1.42	.94	.09	--			
3	Task Conflict Mean	2.54	.43	-.12	-.11	--		
4	Task Conflict Variance	.37	.31	-.07	-.06	-.03	--	
5	Task Conflict Skewness	.04	1.06	-.05	-.18	-.05[a]	.03	--
6	Team Performance	24.05	11.97	-.21*	-.13	-.09	.07	.29**

*Note. ** $p < 0.01$, * $p < 0.05$, N ranges from 117 to 120.*

[a] There was a non-significant correlation between conflict skewness and conflict mean.

Table 2

Study 1: Results of Regression Analysis of Task Conflict Skewness on Team Performance

	Team Performance		
Variables	**Step 1**	**Step 2**	**Step 3**
Control Variables			
Age Diversity	-14.52	-16.34	-14.65
	(21.93)	(22.15)	(21.47)
Gender Diversity	-1.62	-1.71	-1.11
	(1.17)	(1.17)	(1.16)
Conflict Mean and Variance			
Task Conflict Mean		-2.95	-2.46
		(2.57)	(2.50)
Task Conflict Variance		2.09	1.89
		(3.56)	(3.45)
Task Conflict Skewness			
Task Conflict Skewness			2.91**
			(1.01)
R-square	.02	.04	.11
R-square change	--	.02	.07**

Notes. Values in parentheses indicate standard errors. Variance inflation factors (VIFs) ranged from 1.01 to 1.06. ** $p < .01$, * $p < .05$, N = 116

Table 3

Study 2: Means, Standard Deviations, and Correlations among Study Variables

	Variables	Mean	Std. Dev.	1	2	3	4	5	6	7
1	Team Size	7.8	3.18	--						
2	Tenure Diversity	.35	.20	.14	--					
3	Gender Diversity	.39	.15	.19	.20	--				
4	Task Conflict Mean	3.40	.54	-.06	-.00	-.09	--			
5	Task Conflict Variance	1.09	.77	-.04	-.20	-.02	.16	--		
6	Task Conflict Skewness	.17	1.09	.05	.06	.15	-.18[b]	.34*	--	
7	Reflective Communication	5.06	.49	-.18	.10	-.32*	-.34*	.07	.42**	--
8	Team Performance	5.11	.92	-.12	-.27	-.27	-.27	-.05	.00	.49**

*Note. ** $p < .01$, * $p < .05$, N ranges from 38 to 41*

[b] There was a non-significant correlation between conflict skewness and conflict mean.

Table 4

Study 2: Regression results for indirect effect of Conflict Skewness on Team Performance through Reflective Communication

	Path *c* DV: Team performance			**Path *a* DV: Reflective communication**			**Path b DV: Team performance**		**Path *c'* DV: Team performance**			
Variables	**Step 1**	**Step 2**	**Step 3**	**Step 1**	**Step 2**	**Step 3**	**Step 1**	**Step 2**	**Step 1**	**Step 2**	**Step 3**	**Step 4**
Control Variables												
Team size	-.01 (.05)	-.02 (.05)	-.02 (.05)	-.02 (.02)	-.02 (.02)	-.03 (.02)	-.01 (.05)	.01 (.04)	-.01 (.05)	-.02 (.05)	-.02 (.05)	.01 (.04)
Gender diversity	-1.31 (1.05)	-1.23 (1.03)	-1.26 (1.08)	-1.17* (.54)	-1.15* (.50)	-1.36** (.46)	-1.31 (1.05)	-.28 (.95)	-1.31 (1.05)	-1.23 (1.03)	-1.26 (1.08)	.14 (1.04)
Tenure diversity	-1.02 (.80)	-1.06 (.80)	-1.08 (.81)	.54 (.41)	.50 (.38)	.45 (.34)	-1.02 (.80)	-1.66* (.72)	-1.02 (.80)	-1.06 (.80)	-1.08 (.81)	-1.68* (.74)
Conflict Mean and Variance												
Task conflict mean		-.48 (.29)	-.46 (.31)		-.40** (.14)	-.28* (.13)				-.48 (.29)	-.46 (.31)	-.10 (.29)
Task conflict variance		-.03 (.20)	-.04 (.22)		.12 (.10)	-.00 (.09)				-.03 (.20)	-.04 (.22)	-.05 (.19)
IV & Mediator												
Task conflict skewness			.02 (.16)			.20** (.07)					.02 (.16)	-.17 (.15)
Reflective communication								1.00** (.28)				1.14** (.36)
R-square	.12	.19	.19	.16	.32	.47	.12	.36	.12	.19	.19	.40
R-square change	--	.07	.00	--	.17*	.14**	--	.24**	--	.07	.00	.21**

Notes. Values in parentheses indicate standard errors. VIFs ranged from 1.06 to 1.83. ** $p < .01$, * $p < .05$

Table 5

Study 2: Results of Mediation – Indirect effect of Conflict Skewness on Team Performance through Reflective Communication

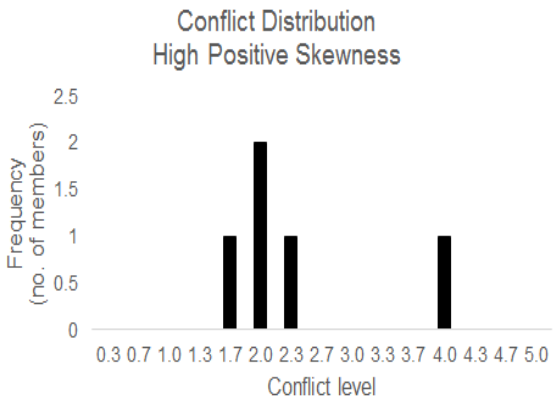
	Team Performance	
Variables	**Coefficient**	**S.E.**
Control Variables		
Team Size	.01	.04
Tenure Diversity	-1.68*	.74
Gender Diversity	.14	1.04
Task Conflict Mean	-.10	.29
Task Conflict Variance	-.05	.19
Path Analysis		
X→M	.17*	.07
M→Y	1.14**	.36
Indirect effect (X→M→Y)	.19*	.12
Direct effect (X→Y)	-.17	.15
Total Effect (X→Y & X→M→Y)	.02	.16
95% Confidence Interval	[.02, .51]	

Notes. ** $p < .01$, * $p < .05$;

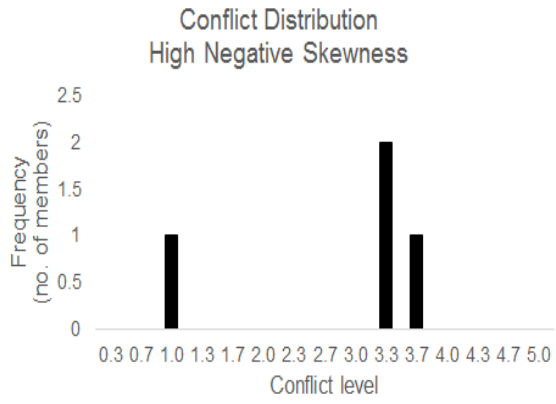
For the bootstrap, we drew 5000 samples and tested the indirect effect using a bias-corrected confidence interval based on the percentile method

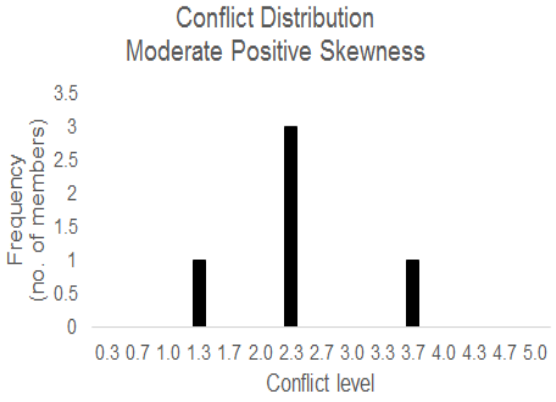
Figure 1

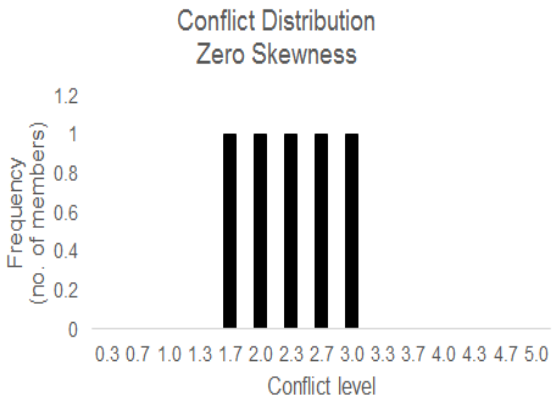
Study 1: Illustrations of Exemplar Frequency Distributions of Different Levels of Skewness

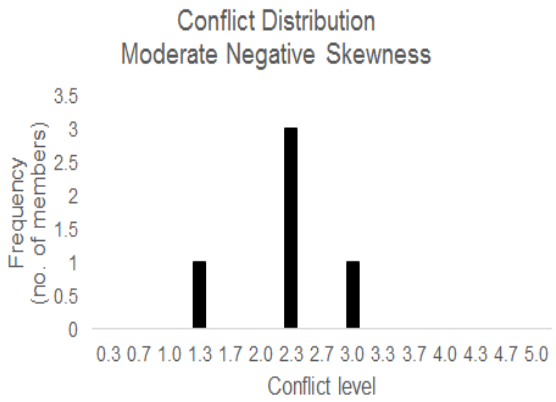

Conflict Distribution
High Positive Skewness
Frequency (no. of members)
2.5
2
1.5
1
0.5
0
0.3 0.7 1.0 1.3 1.7 2.0 2.3 2.7 3.0 3.3 3.7 4.0 4.3 4.7 5.0
Conflict level

Conflict Distribution
Zero Skewness
Frequency (no. of members)
2.5
2
1.5
1
0.5
0
0.3 0.7 1.0 1.3 1.7 2.0 2.3 2.7 3.0 3.3 3.7 4.0 4.3 4.7 5.0
Conflict level


Conflict Distribution
High Negative Skewness
Frequency (no. of members)
2.5
2
1.5
1
0.5
0
0.3 0.7 1.0 1.3 1.7 2.0 2.3 2.7 3.0 3.3 3.7 4.0 4.3 4.7 5.0
Conflict level


Conflict Distribution
Moderate Positive Skewness
Frequency (no. of members)
3.5
3
2.5
2
1.5
1
0.5
0
0.3 0.7 1.0 1.3 1.7 2.0 2.3 2.7 3.0 3.3 3.7 4.0 4.3 4.7 5.0
Conflict level


Conflict Distribution
Zero Skewness
Frequency (no. of members)
1.2
1
0.8
0.6
0.4
0.2
0
0.3 0.7 1.0 1.3 1.7 2.0 2.3 2.7 3.0 3.3 3.7 4.0 4.3 4.7 5.0
Conflict level


Conflict Distribution
Moderate Negative Skewness
Frequency (no. of members)
3.5
3
2.5
2
1.5
1
0.5
0
0.3 0.7 1.0 1.3 1.7 2.0 2.3 2.7 3.0 3.3 3.7 4.0 4.3 4.7 5.0
Conflict level