

Cover Page



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Author: Wit, Frank R.C. de

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Chapter 3

Task conflict, information processing, and decision making: The damaging effect of relationship conflict

A popular theoretical assumption holds that task-related disagreements stimulate critical thinking and, thus, may facilitate superior group decision-making. Two recent meta-analyses showed, however, that although some studies found a positive relationship between task conflict and decision-making quality other studies found a negative or even no relationship (C. K. W. De Dreu & L. R. Weingart, 2003b; F. R. C. De Wit, L. L. Greer, & K. A. Jehn, 2012). In two studies, we build upon the suggestion of both meta-analyses that it may be the presence of relationship conflict that determines whether a task conflict is positively or negatively related to decision making. The findings presented in this chapter show that the level of perceived relationship conflict during a task conflict (Study 1), as well as the actual presence (vs. absence) of relationship conflict during a task conflict (Study 2), increases group members' rigidity in holding on to suboptimal initial preferences during decision making and, therefore, lead to poor decisions. Moreover, in both studies we find that the effect on decision making is mediated by biased use of the information available.

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Many researchers and practitioners have argued that task-related disagreements can stimulate critical thinking and, thus, may facilitate superior group decision-making (e.g., Amason, 1996; Deutsch, 1973; Jehn, 1995; Nemeth, 1995; Schulz-Hardt, Brodbeck, Mojzisch, Kerschreiter, & Frey, 2006). In contrast to these findings, two meta-analyses of the intragroup conflict literature found no support for an overall positive association between task conflict (disagreements that follow from different task-related viewpoints) and group performance (De Dreu & Weingart, 2003b; De Wit, Greer, & Jehn, 2012). Although De Dreu and Weingart's initial meta-analysis of 30 studies on intragroup conflict even showed an overall negative association between task conflict and group performance, the more recent meta-analysis of 116 studies by De Wit et al. (2012) showed that overall, the association between task conflict and group performance is neither negative nor positive. Moreover, De Wit et al.'s results showed that the association between task conflict and group performance depends on moderating factors such as the association between task conflict and relationship conflict (disagreements that arise from interpersonal incompatibilities and include affective elements such as feeling friction and tension; Jehn, 1994). More specifically, in line with earlier findings by De Dreu and Weingart, the findings of De Wit et al. showed that task conflict and group performance were more positively related among studies where the association between task and relationship conflict was relatively weak rather than strong.

These results can be interpreted as providing evidence for the idea that groups are more likely to benefit from a task conflict when the task conflict occurs in the absence (vs. presence) of a relationship conflict (e.g., Shaw, Zhu, Duffy, Scott, & Shih, 2011). Yet, because meta-analyses can only draw inferences at the study level but not at the group or individual level of analyses, the two meta-analyses could not test this hypothesis directly, nor could they investigate the processes that may underlie this damaging effect of relationship conflict (cf. Lau & Cobb, 2010). To fill this void, in this chapter we present two experimental studies in which we investigate how relationship conflict impairs the link between task conflict and group decision-making. We propose that the presence of relationship conflict during a task conflict has two important consequences. First, that it makes group members more likely to rigidly hold on to an initially preferred decision alternative. Secondly, that it makes group members

process information in a biased manner, such that group members will tend to use their own information during decision making rather than the information they receive from other group members.

By examining the damaging effect of relationship conflict on the link between task conflict, information processing, and decision making, the current chapter integrates and extends research on the connection between task and relationship conflict (e.g., Jehn, 1995) with experimental research on conflict and information processing in decision-making groups (e.g., Scholten, Van Knippenberg, Nijstad, & De Dreu, 2007; Schulz-Hardt et al., 2006). In addition, this chapter addresses the need for identifying the circumstances that may help or hinder the potential beneficial effect of task conflict on group performance (e.g., Behfar & Thompson, 2007; De Dreu, 2008; De Dreu & Weingart, 2003b; Jehn & Bendersky, 2003). More specifically, in the current chapter we will show that the presence of a relationship conflict inhibits the potentially beneficial effect of task conflict due to an increased tendency of group members to rigidly hold on to their initial decision-preferences (e.g., Brodbeck, Kerschreiter, Mojzisch, & Schulz-Hardt, 2007; Greitemeyer & Schulz-Hardt, 2003).

Conflict and Rigidity in Decision making

When group members work toward a common group goal (e.g., designing a new product, or maximizing the return on investment) a task conflict may arise when group members have diverging task-related viewpoints. In this chapter we will focus on two different reasons why such a task conflict can co-occur with a relationship conflict. First, we focus on task conflicts that co-occur with relationship conflicts due to misinterpretations of a task conflict as a relationship conflict. This can happen when a disagreement about the task is taken too personally and group members therefore feel they also disagree on a more personal level. Secondly, we focus on task conflicts that co-occur with relationship conflicts because in addition to the task conflict, an unrelated relationship conflict arises about more personal matters, such as a disagreement that arises due to diverging political or artistic preferences, or from incompatible personalities. We propose that in both cases, thus irrespectively of whether a relationship conflict is directly related to the task conflict or not, the presence of relationship conflict is likely to cause

an increased rigidity during the task conflict. Below we will explain these two forms of relationship conflict, and their relation to information processing and decision making in more detail.

Task conflicts are easily misinterpreted as a relationship conflicts because task-related viewpoints often become strongly intertwined with group members' self-views, and individuals quickly develop a feeling of ownership of their viewpoints (e.g., De Dreu & Van Knippenberg, 2005). Self-verification theory suggests that scrutiny and/or rejection of task-related viewpoints, therefore, might often feel as a negative assessment of the self (e.g., Swann, Polzer, Seyle, & Ko, 2004). Hence, during task conflict, group members might easily feel that in addition to their task-related viewpoints, they are also being criticized at a more personal level. As a result, task-related debates might often be perceived as personal attacks and misinterpreted as relationship conflicts (e.g., Fisher & Ury, 1981; Jehn, 1997; Simons & Peterson, 2000; Torrance, 1957; Yang & Mossholder, 2004).

This misinterpretation of a task conflict as a relationship conflict is likely to cause counterproductive cognitions and behaviors (Simons & Peterson, 2000). That is, in response to attacks on to their self-views, individuals often become defensive (e.g., Baumeister, Smart, & Boden, 1996) and make a shift from a cooperative mindset towards a more competitive mindset (De Dreu & Van Knippenberg, 2005). Although such competitive mindsets may assist group members in protecting and maintaining their self-concepts, they will come at the expense of finding a mutually agreeable solution (e.g., Deutsch, 1973). More specifically, such mindsets may lead to an escalation of commitment and even positional bargaining in which parties hold on to a certain task-related viewpoint and argue for it as a goal in itself, regardless of any underlying interests (Fisher & Ury, 1981). In sum, group members are likely to become rigid in holding on to their initial opinion when they misinterpret a task conflict as a relationship conflict.

Relationship conflicts that are not directly related to the task conflict, but instead arise independently from the task conflict, are likely to cause rigidity during a task conflict as well. When debates about more personal matters create friction, negative emotions, and interpersonal animosity (all the ingredients of a relationship conflict), this may easily spill-over, and determine the way group members react to a task-related

debate. The presence of a relationship conflict, for instance, may encourage hostile interpretations of task-related viewpoints, thereby creating ‘a self-fulfilling prophecy of mutual hostility and conflict escalation’ (Simons & Peterson, 2000, p. 104). Hence, instead of approaching a task-related debate with an open-mind, the presence of relationship conflict may cause group members to be more competitive during a task conflict and to reduce their willingness to consider and use the viewpoints of their fellow group members (e.g., Janssen, Van de Vliert, & Veenstra, 1999).

Indeed, ample research on dyadic and group conflict suggests that such competitive mindsets can lead to rigidity in the form of distributive bargaining, derogation of counterparts, and the reluctance to disconfirm initial preferences (De Dreu, 2008; De Dreu, Weingart, & Kwon, 2000; Rubin, Pruitt, & Kim, 1994; Tjosvold, 1998; Toma & Butera, 2009). In sum, theory suggests that the misinterpretation of a task conflict as a relationship conflict, as well as the occurrence of an unrelated relationship conflict with a task conflict, is likely to augment group members’ rigidity in holding on to an initial viewpoint during group decision-making. Therefore, we propose:

Hypothesis 1. During group decision-making, group members are more likely to rigidly hold on to their initial opinion when they encounter a task conflict in the presence (compared to the absence) of relationship conflict.

Conflict and Biases in Information Processing

In addition to becoming more rigid in holding on to an initial opinion, group members might also process information in a more biased manner when they encounter a task conflict in the presence (compared to the absence) of relationship conflict (e.g., Janssen et al., 1999). More specifically, due to the presence of a relationship conflict, group members may focus on information that they possess themselves and that supports their initial task-related viewpoint, rather than on information they receive from other group members and that may possibly be inconsistent with their initial preferences. These biases in processing of task-related information might mediate the impact of relationship conflict on individuals’ tendency to hold on to their initial opinions during task conflict; because individuals focus primarily on their own information and

ignore the information they receive from their group members, they might automatically become more likely to hold on their initial opinion rather than changing it in deference of someone else's opinion.

There might be two distinct processes that explain why in the presence of relationship conflict group members' may process task-related information in a biased manner. First, in line with the motivated information processing in groups model (MIP-G; De Dreu, Nijstad, & Van Knippenberg, 2008), group members might more or less deliberately choose not to use the ideas and information from other group members because the presence of a relationship conflict reduces their motivation to process information systematically during a task conflict. Secondly, and less intentionally, group members might process information in a biased manner because they feel a reduced ability to cope with a task conflict when it co-occurs with a relationship conflict (which causes group members to focus primarily on information that is consistent with initial preferences; e.g., Fischer et al., 2011; Kamphuis, 2010; Kassam, Koslov, & Mendes, 2009).

According to the MIP-G (De Dreu et al., 2008) group members' motivation to systematically process information is determined by their epistemic motivation as well as their social motivation. Epistemic motivation is defined as the willingness to expend effort to achieve a thorough and accurate understanding of the task at hand. Social motivation is defined as the individual preference for outcome distributions between oneself and other group members. The MIP-G model postulates that epistemic motivation drives the degree to which information is attended to whereas social motivation drives the kind of information that individuals attend to. Social motivation, for example, may determine whether group members will focus primarily on information supporting their preferred alternative or on information that could integrate different decision alternatives (De Dreu et al., 2008).

The presence of relationship conflict is likely to reduce group members' epistemic motivation. A recent meta-analysis for example showed that relationship conflict is negatively related to group members' commitment to the group (De Wit et al., 2012). Therefore in the presence (vs. absence) of relationship conflict, group members might disengage from the group task and ignore what other group members have to say. In addition to reducing group members' epistemic motivation, the presence

of relationship conflict is also likely to affect group members' social motivation. More specifically, in line with the MIP-G, it can be expected that the presence of relationship conflict elicits a more competitive social motivation and therefore reduces group members' motivation to attend to information that would facilitate consensus and the integration of perspectives (e.g., Van Kleef & De Dreu, 2002). Put differently, the presence of relationship conflict may cause group members' to be more concerned with 'winning' the debate, instead of developing an accurate and deep understanding of the decision problems at hand (Fisher & Ury, 1981).

As a result, in the presence of relationship conflict, individuals may increase their attention to the task-related arguments of others, but only in the hope of detecting flaws in those arguments. Therefore despite an increased attention to others' task-related viewpoints, group members will not really process other task-related arguments systematically (for example, to find a mutually beneficial solution). Instead they will be motivated to only use information that supports initial viewpoints and/or information that depreciates others' viewpoints (e.g., Brodbeck et al., 2007; Greitemeyer, & Schulz-Hardt, 2003). Hence, they will be motivated to ignore information that is inconsistent to their initial viewpoints and would potentially help integrate different perspectives. In sum, when a task conflict co-occurs with a relationship conflict, group members may not be motivated to thoroughly process the alternative perspectives of their group members due to a lower commitment to the group and a more competitive social motivation.

In addition to this motivational explanation, group members' bias towards their own information and viewpoints may also result from the anxiety that is triggered by the presence of a relationship conflict. That is, when group members do not feel able to cope with a workplace conflict, it may elicit anxiety (e.g., Dijkstra, Van Dierendonck, & Evers, 2005; Narayanan, Menon, & Spector, 1999), especially when a conflict gets personal and emotional (e.g., Jehn, 1997). The presence of relationship conflict, therefore, may impair cognitive functioning, because the anxiety triggered by the presence of a relationship conflict is likely to narrow group members' field of attention and reduce the number of information channels they use (e.g., Kamphuis, 2010; Staw et al., 1981). In line with the threat rigidity hypothesis (e.g., Staw et al., 1981), research suggests that

feelings of anxiety reduce the likelihood of individuals to adjust task-related viewpoints (De Wit, Scheepers, & Jehn, 2012; Kassam et al., 2009). Likewise feelings of anxiety have been linked to biases in information processing, such that anxiety increases the likelihood of individuals to use information that corresponds to initial viewpoints (e.g., Fischer et al., 2011).

In sum, when a task conflict co-occurs (vs. not co-occurs) with a relationship conflict, group members are more likely to process information in a biased manner due to a self-reinforcing cycle of deliberate (motivation) and somewhat unintentional (anxiety) processes that both cause individuals to focus and use information that they possess themselves rather than information they receive from other group members. Hence, we propose:

Hypothesis 2. During group decision-making, group members are less likely to process the information provided by other group members when they encounter a task conflict in the presence (compared to the absence) of a relationship conflict.

As aforementioned, we propose that this biased information processing mediates the effect of relationship conflict on group members' rigidity in group decision-making. That is, in line with recent theorizing on decision making in groups, biases towards one's own information should make group members more likely to stick to decisions that are consistent with their initial preferences (e.g., Brodbeck et al., 2007). More specifically, because relationship conflict will increase group members' focus on information that is consistent with their own viewpoint, group members will fail to learn from information that may contradict their initial viewpoint. Moreover, through biased information processing, the presence of a relationship conflict augments individuals' tendency to hold on to suboptimal preferences even if all available information is exchanged (e.g., Brodbeck et al., 2007; Greitemeyer & Schulz-Hardt, 2003). That is, group members may not only judge their own information and preference-consistent information to be more credible, they may also fail to consider the information from others in the first place. Hence, the fact that the presence of relationship conflict may facilitate group members' tendency to hold on to their initial preferences is likely to be

due to a further decrease in the extent to which they process the viewpoints and information of others. Therefore we propose that:

Hypothesis 3. Biased information processing mediates the effect of the presence (compared to the absence) of relationship conflict on group members' rigidity during group decision-making. More specifically, during group decision-making, group members are more likely to rigidly hold on to their initial opinion when they encounter a task conflict in the presence (compared to the absence) of relationship conflict because they will make less use of the information provided by other group members.

Finally, we propose that two distinct factors, in turn, might mediate the effect of the presence (compared to the absence) of a relationship conflict on biased information processing. First, in line with the aforementioned research on motivated information processing in groups (e.g., Scholten et al., 2007), the more biased information processing could be ascribed to individuals reduced motivation to process information systematically. Secondly, when a task conflict co-occurs with a relationship conflict, group members may perceive the task conflict as more demanding and, therefore, feel less able to cope with the conflict. As a result, and in line with research on anxiety and biases in information processing (e.g., Fischer et al., 2011; Kassam et al., 2009), they might feel more anxious, which causes them to unintentionally focus on information that is related to their initial decision. Hence, we propose that group members are less likely to use the information they receive from other group members when they encounter a task conflict in the presence (compared to the absence) of relationship conflict because (i) they are less motivated to process information systematically (Hypothesis 4a) and (ii) because they feel less able to cope with the task conflict (Hypothesis 4b).

Our research

The aim of our research is to investigate whether group members are indeed less likely to use the viewpoints provided by others in their decision making and show more rigidity during decision making when a task conflict occurs in the presence (compared to absence) of a relationship conflict. To examine information processing and decision making we asked participants to work on a hidden profile task (see Stasser & Titus, 1985; Toma & Butera, 2009). In a hidden profile task, part of the

information is shared among group members whereas other pieces of information are unshared. When all information available to the group is considered, group members should be able to derive the correct solution. Yet, no group member can identify this best solution on the basis of only their own individual information. Instead, individual group members are directed to a suboptimal decision alternative by the subset of the information they receive, and therefore the use of each other's information, as well as the disconfirmation of group members' initial preferences is required to derive the correct solution (Schulz-Hardt et al., 2006). A hidden profile task, therefore, offers a well-suited possibility to examine group members' rigidity in holding on to their initial (but incorrect) preference (Hypothesis 1), as well as the extent to which they process and use the information they receive from the other group members (Hypothesis 2).

Participants were asked to solve the hidden-profile task together with two other group members. The other two group members were confederates, which enabled us to experimentally induce a task conflict. We operationalized task conflict in line with the common definition of task conflict (e.g., Jehn, 1994) as an overt disagreement about the solution to the task at hand. We induced the task conflict by having the two confederates (i) clearly state that they disagreed with the participants' preferred solution, (ii) explicitly mention their preferred alternative solution to the task, and (iii) explain why exactly they preferred this other solution to the task.

Participant did not interact directly with other participants for two reasons. First, we wanted to make sure that all participants encountered the same task conflict. Secondly, we wanted to make sure all the unshared information was shared by the group members. That is, in hidden-profile situations, group members often fail to discuss their unshared information because they focus on what information they have in common (Gigone & Hastie, 1993; Stasser & Titus, 1985). Group members therefore often stick to their initially preferred solution simply because they and other group members fail to share crucial and preference-inconsistent information. By experimentally controlling the reactions of the group members we could ensure that the group members discussed all the unshared information necessary to derive the correct solution, and participants also knew about the information that contradicted their initial opinion. In this way, we

could ensure that individuals' rigidity in holding on to their initial opinion was not due to any group's failure to share information but, instead due to an intra-person decision process affecting individuals' tendency (not) to use the information (see Greitemeyer & Schulz-Hardt, 2003 for a similar procedure).

We designed Study 1 to examine how the misinterpretation of the task conflict as a relationship affected participants' information processing and decision making. To this end, we examined the extent to which individuals' perceived relationship conflict during the task conflict, and how this affected individuals' information processing and decision making. In Study 2, we used the same experimental induction of task conflict, but now in combination with an experimentally induced relationship conflict (or no relationship conflict). We designed Study 2 to assess how the 'actual' presence (vs. absence) of a relationship conflict during the task conflict altered individuals' information processing and decision making.

Study 1

In the first study we examined how information processing and subsequent rigidity in decision making were affected by the extent to which group members perceived relationship conflict during a task conflict. In line with the hypotheses presented above, we expected that the extent to which group members perceived relationship conflict during a task conflict would be positively related to group members' tendency to rigidly hold on to their initial opinion (Hypothesis 1), and biased information processing (i.e., individuals' tendency to use their own information over the information they receive from other group members) (Hypothesis 2). Moreover, we expected that biased information processing would mediate the effect of the level of perceived relationship conflict on group members' tendency to hold on to their initial opinion (Hypothesis 3). Finally, we also expected that the more group members perceived relationship conflict during a task conflict, they less likely they would be to use the information provided by other group members because (i) they would be less motivated to process information systematically (Hypothesis 4a) and (ii) they would feel less able to cope with the task conflict (Hypothesis 4b).

Participants and Design

A total of 82 participants (50 women, 32 men) took part in this study in return for a monetary award (6 Euros) or partial course requirement. There were no experimental conditions; we induced the same task conflict for all participants and then measured the level of perceived relationship conflict during the task conflict as the independent variable.

Decision Task

Participants worked on a hidden profile task. Ostensibly, they had to work together with two other participants with whom they formed a group. The hidden-profile task was adapted from Toma and Butera (2009) and concerned a road accident investigation. Four persons are potential suspects in this accident, although based on a specific set of 9 clues three of them can be exonerated (Mr. X, Mrs. Y, and Mr. Z) and the fourth (Mr. X's son) incriminated. The task contained 28 items of information: 19 of them were shared and nine were unshared among the group members (see Appendix A). The 19 shared items describe the circumstances of the accident and some specific characteristics of the suspects. On the basis of the nine unshared items participants could identify Mr. X's son as the guilty person. A hidden profile was constructed by allocating three critical unshared items to each of the group members. Based on the three unshared items they received, each group member was oriented to a specific initial preference (Mr. X, Mrs. Y, or Mr. Z). To derive the correct solution, participants were required to use the unshared information of their group members and to disconfirm their own initial preferences. To have experimental control over the level of task conflict, we made participants believe that they really interacted with two other group members although in reality the reactions of the other two group members were pre-programmed. All participants were therefore directed to the same initial solution (Mr. X), whereas their two group members were ostensibly arguing for Mrs. Y and Mr. Z respectively (see for more details below and Appendix A).

Procedures and Independent Variable

When participants arrived in the lab, they were told that they were going to work on a decision-making task with two other participants who

were yet to arrive. Participants were seated in separate cubicles and told that they would work on the task as a group via the computer system. The participants were instructed to first study the road accident case individually and to decide who they identified as the guilty person. They were provided with the 19 shared items along with three unshared items that oriented them towards a specific suspect (Mr. X). These 19 pieces of shared information did not make any of the suspects seem more guilty than the other suspects. Participants knew which of their own items were shared and which items were unshared, and were aware that the other two group members would receive different unshared items. This transparency is important because such explicit knowledge allowed participants to deliberately choose not to use the other group members' unshared information in their decision making (Toma & Butera, 2009). Participants were given 1.5 minutes to find a solution. Next, they were invited to present their decision in front of the webcam, and give a clear motivation why they made this decision (Recording 1). They were told that (a) their statement would be recorded; (b) the other group members would watch their video-recording; (c) that the other group members would give a reaction to their video-recording; and (d) they [the participant] would be able to watch the reactions of the other group members to make a final decision. This set-up (as opposed to a real discussion) was used to control the task situation and to standardize it across participants (see Greitemeyer & Schulz-Hardt, 2003 for a similar procedure). Participants worked under the full impression that their group members actually existed, and knew the gender of the other two group members because they could see their group members (a female and a male confederate) directly via the video-recordings.

Induction of Task conflict

After participants announced their initial decision (Recording 1), and after a short waiting period, we induced the task conflict by means of the pre-recorded reactions of the other group members, in which the other group members openly stated their disagreement with the participants' initial solution. We made sure that all three group members had a different solution in mind (so that none of the possible answers had the majority number of group members supporting it) and that all previously unshared information was being shared during the conflict.

The actors portrayed the disagreement in a non-emotional way, so they were instructed not to make any gestures that could signal emotions such as anger or frustration, to express their opinion in a neutral tone of voice, and to keep a neutral face, so for example not to frown when expressing their opinion.

Based on the unshared items that participants had received (see Appendix A) we expected participants to initially argue Mr. X was the culprit, and therefore the reaction of the first (female) group member was: “Hi all, I don't agree, I don't think Mister X did it. My information said that the guilty person is less than 30 years old. Due to inexperience, the guilty person wasn't able to avoid the collision. Also it said that the guilty person claimed that he or she did not see others approaching the intersection. Therefore I thought it was Mrs. Y...”

Hereafter, a reaction from the second (male) group member followed. This person also disagreed but opted for Mr. Z. The second group member said: “Mhmm.. I don't agree either, I don't think it's X.. But I had Mr. Z because my info said that the guilty person was a man and that a family member was indirectly responsible for the accident and it said that the guilty person was driving at 110km/h... .”

To check whether this debate with their group members was indeed perceived to be a task conflict, right after participants had received their group members' reactions participants were asked to rate their agreement with three items adapted from Jehn et al. (2008). The three items were ‘The solutions of my teammates are different from my own solution’, ‘The guilty person that my teammates have in mind is different from the guilty person that I have in mind’ and ‘Within our team we disagree about the solution of this dilemma’, $\alpha = .68$. These and all other items were always presented in the same order, and there were no time-constraints on how long participants could take to answer these questions.

Next we checked the extent to which participants perceived relationship conflict during the task conflict. Participants were asked to rate their agreement with five statements regarding the amount of relationship conflict they had perceived. The items were adapted from Jehn (1995) and were “I felt somewhat irritated by the response of my teammates”, “The exchange of our preferences got a bit personal”, “The comments of my teammates were not really helpful”, “I think I can get

along well with my teammates”, and “I think our personalities do not work well together” ($\alpha = .74$). After this, we measured the participants conflict-related coping appraisals (see below for more details), and participants were asked to present their individual final decision by means of a webcam recording and to provide an explanation for why they came to this decision (Recording 2). Finally, participants were asked to fill in a short survey, including our measure of their motivation to process information systematically (see for more details below), and to provide a final rank-order of whom of the four persons they thought was most likely to be the culprit (Mr. X, Mrs. Y, Mr. Z, or the son of Mr. X), after that they were debriefed, paid and thanked for their participation.

Dependent measures

Rigidity in decision making. The primary dependent variable was the final decision that was made. Following Toma and Butera (2008), the final decision was a categorical measure expressing whether participants chose the decision reflecting rigidity (Mr. X), the correct decision (Son of Mr. X), or a decision reflecting yielding (Mrs. Y or Mr. Z). Mr. X was considered as the rigid decision, because participants who made this decision stuck with their initial solution, despite the disagreements with the other group members and the unshared information items they received from them that should have directed them to the correct decision. Mrs. Y and Mr. Z were considered as the ‘yielding’ decision, because participants who made this decision ‘yielded’ by agreeing with (one of) their group members even though their own unshared information and the information they received from their group members directed them to a different solution. Given the three decision-types our dependent variable allowed us to examine whether an increased tendency to hold on to their initial opinion comes at the expense of individuals’ tendency to yield and/or their tendency to derive the correct solution. We expected that compared to holding on to an initial opinion, individuals would be less likely to yield as well as less likely to derive the correct solution when a task conflict co-occurs with a relationship conflict and, therefore, we did not present separate hypotheses for each of these two answer categories.

Information Processing. The presentations of participants’ final decision (Recording 2) were written out and then content-analyzed by two

research assistants. We first determined which of the nine unshared items participants used to support their final decision. Next, we determined how many of these items participants had initially received themselves and how many they had later received from other group members during the discussion. We also determined the proportion of others' vs. participants' own unshared information that was used to support a final decision. To do so, we divided the number of unshared items that were provided to participants through their group members by the total number of unshared items that participants used to support their final decision. So, for example, when participants used four unshared items to support their final decision, and three of these items were provided to participants through their group members, the proportion of other versus participants' own unshared information would $\frac{3}{4} = .75$. Both coders evaluated all written out texts and were blind to the hypotheses. They were trained by the first author and were instructed to count the number of pieces of unshared information that were mentioned by the participant. The reliability of their codings was substantial (Cohen's kappa = .72) and one of the coders and the first author resolved the discrepancies among the codings by reaching consensus via discussion.

Motivation to process information systematically. We measured participants' motivation to process information systematically with the following four items adapted from De Dreu, Koole, and Oldersma (1999) "When solving the dilemma, I hardly thought about all the information I had received"(reverse coded), "I tried to use and combine all available information in my solution", "I have not paid much attention to the information that my teammates gave me" (reverse coded), and "I tried to utilize all available information in my solution" ($\alpha = .77$).

Ability to cope with task conflict. Coping appraisals were measured by four items adapted from Tomaka, Blascovich, Kelsey, and Leitten (1993). Two items concerned the perceived demands of the task conflict, "It is difficult to get past the differences between our solutions" and "It is stressful that our solutions are so different" and two items concerned the perceived resources to cope with the task conflict, "I think that I am able to solve the differences between our solutions" and "Despite our different solutions, I think I am able to find the right solution to this dilemma" ($\alpha = .79$).

Results

Manipulation Checks and Descriptive Statistics

Recall that to facilitate our manipulation of task conflict, participants initially received unshared information that directed them to one specific answer category (Mr. X). To check whether participants indeed opted for Mr. X, we content-analyzed the video-recordings to identify their initial solution. The results showed that except for one participant, all of the 82 participants initially thought that it was Mr. X who caused the accident (the one participant who did not chose Mr. X was excluded from further analyses because his answer made the manipulation obsolete). Results show the manipulation of task conflict was successful; the average level of reported task conflict was high and significantly higher than the midpoint on the scale (i.e., 4; $M = 6.54$, $SD = .68$, $t(80) = 33.63$, $p < .001$).

Rigidity in decision making

To test our first hypothesis, that the extent to which group members perceive relationship conflict during a task conflict will be positively related to group members' tendency to rigidly hold on to their initial opinion, we estimated a multinomial logistic regression predicting the answer categories, with the extent to which people perceived relationship conflict during the task conflict as a predictor variable. Model 1, in Table 3.1 shows that, in line with Hypothesis 1, the extent to which group members perceived the task conflict as a relationship conflict had a significant influence on their decision making ($\chi^2 = 17.63$, $df = 2$, $p < .001$). Specifically, participants were ($1 / .281 =$) 3.56 times more likely to stick to their incorrect initial solution (i.e., rigidity), instead of choosing the correct solution, with every one-point increase in the extent to which they perceived relationship conflict during the task conflict. Similarly, participants were three times more likely to hold on to their initial opinion instead of adopting one of the solutions of the other group members (Mrs. Y or Mr. Z; i.e., yielding) with every one-point increase in perceived relationship conflict.

Information Processing

To test our second hypothesis, that group members are less likely to use the unshared information provided by others when they perceive

Table 3.1. *Multinomial Logistic Regressions Examining The Decisions Made In Study 1*

Predictor	Model 1				Model 2				Model 3				Model 4			
	<i>B</i>	<i>SE</i>	<i>OR</i>	<i>Wald</i>	<i>B</i>	<i>SE</i>	<i>OR</i>	<i>Wald</i>	<i>B</i>	<i>SE</i>	<i>OR</i>	<i>Wald</i>	<i>B</i>	<i>SE</i>	<i>OR</i>	<i>Wald</i>
	Correct Solution (Son of Mr. X) versus Incorrect 'Rigidity' Solution (Mr.X)															
Intercept	2.83**	.97		8.52	-.91	1.34		.46	-8.17*	3.45		5.61	-4.58	3.94		1.35
Perceived Relationship Conflict	-1.27**	.39	.28	1.90	-.83*	.41	.43	4.09	-.51	.43	.60	1.43	-.55	.45	.58	1.47
Motivation to process information									.93*	.42	2.54	4.93	.17	.54	1.19	.10
Coping Ability									.90**	.30	2.46	8.81	.45	.34	1.57	1.75
Information Use					.06***	.02	1.07	14.31					.06**	.02	1.06	9.14
	Incorrect 'Rigidity' Solution (Mr.X) versus Incorrect 'Yielding' Solution (Mrs.Y or Mr.Z)															
Intercept	-2.06*	1.03		4.01	.20	1.28		.03	2.32	3.37		.47	.01	3.65		.00
Perceived Relationship Conflict	1.09**	.41	2.97	7.19	.73†	.41	2.07	3.19	.86†	.47	2.37	3.34	.83†	.47	2.29	3.15
Motivation to process information									-.61	.41	.54	2.21	-.13	.50	.88	.07
Coping Ability									-.15	.29	.86	.27	.09	.33	1.09	.07
Information Use					-.04**	.01	.96	7.44					-.03†	.02	.97	3.56
	Correct Solution (Son of Mr. X) versus Incorrect 'Yielding' Solution (Mrs.Y or Mr.Z)															
Intercept	.76	.97		.62	-.71	1.30		.30	-5.85	3.76		2.42	-4.57	3.90		1.37
Perceived Relationship Conflict	-.18	.42	.83	.19	-.11	.41	.90	.07	.35	.50	1.42	.51	.28	.49	1.32	.32
Motivation to process information									.32	.44	1.38	.52	.04	.52	1.04	.01
Coping Ability									.75*	.31	2.11	5.85	.54	.32	1.71	2.90
Information Use					.02	.01	1.02	2.38					.03	.02	1.03	2.21
Chi-square	17.63***				39.56***				33.99***				44.05***			
<i>df</i>	2				4				66				88			
-2 log likelihood	77.08				112.69				132.61				117.16			
Cox and Snell pseudo R ²	.20				.40				.35				.44			
Sample size	81				77				79				76			

Note. OR = odds ratio, † $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

relationship conflict during the task conflict, we regressed the unshared information used by participants to support their final decision on the extent to which people perceived relationship conflict during the task conflict. In support of Hypothesis 2, the use of the unshared information that participant received from the other group members was negatively related to the extent to which participants perceived relationship conflict during the task conflict; both in absolute terms, $\beta = -.31$, $t(78) = -2.912$, $p = .005$, $R^2 = .10$, as well as relative to their use of their own unshared information they used, $\beta = -.38$, $t(76) = -3.524$, $p < .001$, $R^2 = .14$.

Mediation Analyses

To test our third hypothesis, that information processing mediates the effect of the perceived level of relationship conflict during the task conflict on group members' tendency to adjust their initial opinion, we followed the three-step procedure suggested by Baron and Kenny (1986). More specifically, to establish mediation our first step was to establish that our independent variable (the perceived level of relationship conflict during the task conflict) affected our main dependent variable (individuals' tendency to hold on to an initial opinion). The second step was to establish that our independent variable affected our proposed mediating variable (individuals' tendency to use the information received from other group members). The third and final step was to establish that the effect of our independent variable on the main dependent variable was significantly reduced when controlling for the mediating variable. The results presented in the previous two sections showed that the perceived level of relationship conflict during the task conflict indeed predicted individuals' tendency to hold on to an initial opinion (step 1) as well as individuals' tendency to use the information received from other group members (step 2). To test step 3, we estimated a multinomial logistic regression predicting the answer categories, with two predictor variables: (i) the extent to which relationship conflict was perceived during the task conflict, and (ii) the proportion of other group members' versus own unique information that was used during decision making ('information use').

As can be seen in Table 3.1, Model 2, the effect on decision making was mediated by information processing. That is, when information processing was entered in the model, the effect of perceived

relationship conflict was reduced, both for the correct solution versus the incorrect ‘rigidity’ solution and for the incorrect ‘rigidity’ solution versus the incorrect ‘yielding’ solution. We also conducted bootstrapping analyses as described by Preacher and Hayes (2004) for estimating the direct and indirect effects of perceived relationship conflict on participants’ tendency to stick to their initial opinion. Using bootstrapping we derived a confidence interval for the indirect effect, that provides a more accurate estimate of the indirect effect with small-to-moderate samples size than does the Sobel test (see Shrout & Bolger, 2002). The indirect effect is significant at $p < .05$ if the 95% confidence intervals do not include the value of zero. As seen in Table 3.2, the test confirmed that the mediation was significant. Hence, supporting Hypothesis 3, the extent to which group members perceive relationship conflict during a task conflict is negatively related to group members’ use of the information provided by other group members, that, in turn, is related to greater rigidity in decision making.

Motivation and Coping Ability. We then tested whether motivation (Hypothesis 4a) and coping ability (Hypothesis 4b) explain why participants made less use of their group members’ information when they perceived more relationship conflict during the task conflict. Using regression analyses, we first established that the extent to which group members perceived relationship conflict during the task conflict was negatively related to their motivation to process information systematically, $\beta = -.42$, $t(1, 80) = -4.15$, $p < .001$, as well as their perceived coping ability, $\beta = -.36$, $t(1, 78) = -3.43$, $p < .001$. Next, and in line with both hypotheses 4a and 4b, we found that after entering motivation ($\beta = .56$, $t(75) = 6.006$, $p < .001$) and coping ability ($\beta = .33$, $t(75) = 3.559$, $p < .001$), the main effect of perceived relationship conflict on information processing was indeed reduced ($\beta = -.047$, $t(75) = -.469$, $p = .64$). As seen in Table 3.2, subsequent bootstrapping analyses showed these mediating effects were significant. In sum, in line with Hypothesis 4a and 4b, group members make less use of the information provided by others the more relationship conflict they perceive during a task conflict, and this effect is mediated by motivation to process information as well as their perceived ability to cope with the task conflict.

Table 3.2. *Bias-Corrected Bootstrapped Estimates of the Mediations of Studies 1 & 2*

	Bias-corrected bootstrapped 95% confidence interval estimates	
	Study 1	Study 2
Mediation Analyses 1		
TC & RC ^a -> Information Use -> Final Decision	(-1.446; -.246)*	(-.301; -.046)*
Mediation Analysis 2 ^a		
TC & RC -> Motivation to process information -> Information Use	(-.115; -.031)*	(-.104; -.002)*
TC & RC -> Coping Ability -> Information Use	(-.063; -.005)*	(-.034; .024)
Mediation Analysis 3 ^a		
TC & RC -> Motivation to process information -> Final Decision	(-.742; -.005)*	(-.183; -.003)*
TC & RC -> Coping Ability -> Final Decision	(-.680; -.016)*	(-.035; .042)
Mediation Analysis 4		
Motivation to process information -> Information Use -> Final Decision	(.493; 2.164)*	(.051; .153)*
Coping Ability -> Information Use -> Final Decision	(.122; 1.113)*	(.009; .119)*

Notes. The mediation analyses examine the incorrect 'rigidity' solution (Mr.X) against the correct solution (Son of Mr. X) and the incorrect 'yielding' solution (Mrs.Y or Mr.Z) together. ^a TC & RC stands for the co-occurrence of task conflict (TC) and relationship conflict (RC) and refers to the extent to which group members perceived relationship conflict during the task conflict in experiment 1, and the manipulation of relationship conflict in experiment 2.

Supplementary analyses. Exploratory analyses also revealed main effects of motivation and coping ability on decision making. Both motivation ($B = 1.15$, $p = .004$, $OR = 3.51$) as well as coping ability ($B = 1.02$, $p < .001$, $OR = 2.77$) predicted whether participants chose the correct solution versus the incorrect ‘rigidity’ solution. Likewise, motivation predicted whether participants chose the incorrect ‘rigidity’ solution versus the incorrect ‘yielding’ solution ($B = .96$, $p = .013$, $OR = 2.60$). As the results of Model 3 in Table 3.1 show, after entering motivation and coping ability in the model, the main effect of perceived relationship conflict reduced, implying that motivation and coping ability mediate the effect of perceived relationship conflict on decision making (see also the bootstrapping results in Table 3.2). To test whether the effect of motivation and coping ability, in turn, was mediated by information processing, we also entered information processing in the model. As can be seen in model 4 in Table 3.1, and the mediation analyses in Table 3.2, information processing indeed mediated the effect of motivation and coping ability on decision making.

Discussion

Study 1 revealed that the extent to which group members perceived relationship conflict during a task conflict was positively related to their rigidity in holding on to their initial preferences during decision making. Hence, the more relationship conflict individuals perceived during the task conflict, the more likely they became to hold on to their initial opinion, and the less likely they became to derive the correct solution or to yield and adopt one of the other group members’ opinion. This is in line with our first hypothesis, and given that all available information was exchanged, this finding shows that the presence of a relationship conflict augments individuals’ tendency to hold on to a suboptimal preferences even if all available information is exchanged (see Brodbeck et al., 2007; Greitemeyer & Schulz-Hardt, 2003).

The results also show strong support for our second and third hypothesis, that underlying this preference for holding on to an initial opinion lies more biased information processing. More specifically, group members were less likely to use information provided by other group members when they perceived a relatively high level of relationship conflict during a task conflict, and this, in turn, explained why they were

less likely to adjust their initial opinion. Study 1 further revealed that group members become less motivated to process information, and also feel less able to cope with the task conflict, when they perceive a relatively high level of relationship conflict. In line with our fourth hypothesis, and the motivated information processing in groups model (De Dreu et al., 2008), group members' reduced motivation to process information led to lower use of the information from their group members. In line with fourth hypothesis, and research linking anxiety to confirmatory information search (e.g., Fischer et al., 2011), group members' perceived ability to cope with the conflict, also mediated the effect on information processing, such that group members became less likely to use the information from other group members, the more they felt unable to cope with the conflict.

The results of Study 1 are consistent with the idea that the potential advantages of task conflict may be erased by the misinterpretations of task as relationship conflict (e.g., Fisher & Ury, 1981; Janssen et al., 1999; Shaw et al., 2011; Simons & Peterson, 2000). That is, the more strongly individuals misinterpreted a task conflict as a relationship conflict, the less likely they became to derive the integrative and superior solution, or to change their opinion in deference of another group member's opinion. Instead, individuals were more likely to hold on to an suboptimal initial opinion, and to focus primarily on their own information, the more strongly individuals misinterpreted a task conflict as a relationship conflict. Together, these results illustrate the psychological and behavioral mechanisms that may underlie the findings of the meta-analyses by De Dreu and Weingart (2003a) and De Wit et al. (2012).

In the current procedure we measured (rather than manipulated) the spontaneous interpretation of task conflict as a relationship conflict. That is, participants did not receive explicit information about a relationship conflict. Hence, it is difficult to attribute the relationship conflict to other factors than the task conflict given that the groups were defined in terms of the task, and participants didn't have any other information about the group members except from the task-relevant information they shared. This converges with many situations where people are often not aware of how a relationship conflict emerges and where relationship conflict arises quickly by the misinterpretations of task as relationship conflict (e.g., Fisher & Ury, 1981; Janssen et al., 1999; Shaw

et al., 2001; Simons & Peterson, 2000). Nevertheless, it is difficult to tell where the individual differences in perceived relationship conflict precisely stem from (e.g., certain personality dispositions). In other words, the current design does not isolate the precise source of the variability in perceived relationship conflict, that was exactly one of the reasons we turned to an experimental design in the second study.

The aims with the second study were twofold. First, we sought to replicate the findings of Study 1, and to establish more causal support for the findings by experimentally controlling the presence of a relationship conflict. That is, a possible limitation of the first study is that it does not provide causal support, but only correlational evidence that the presence of a relationship conflict leads to more rigidity and biased information processing during a task conflict. Second, as outlined in the introduction, relationship conflict does not always have to involve the misinterpretation of a task conflict, but can also develop relatively independently of task conflict in a group. Therefore, our second aim with the second study was to examine whether this second form of co-occurring task and relationship conflict (i.e., a task conflict that co-occurs with an unrelated relationship conflict) can also account for the negative effects on information processing and decision making. That is, many relationship conflicts arise independently from a task conflict, for example, when group members have strong diverging viewpoints in more personal domains such as their norms, values, political preferences and/or their general lifestyle (e.g., Jehn, 1997). In such instances, the increased rigidity in individuals' tendency to hold on to their initially preferred decision alternative, might be due to defensive and competitive cognitions and behaviors that are triggered by the unrelated relationship conflict, and that spill-over to the task conflict (e.g., Janssen et al., 1999). Therefore, we designed Study 2 to examine whether the damaging effects on information processing and decision making are indeed also found when a relationship conflict arises independently from a task conflict, rather than due to the misinterpretation of the task conflict itself.

Study 2

In Study 2 we used the same experimental induction of a task conflict that we used in Study 1, but now in combination with an experimental manipulation of the presence (vs. absence) of a relationship

conflict. We again predicted that group members would be less likely to adjust their initial opinion (Hypothesis 1) and also make less use of the information given to them by their group members (Hypothesis 2) when they encountered a task conflict in the presence (compared to the absence) of an unrelated relationship conflict. Likewise we again predicted that information processing would mediate the effect of the presence (vs. absence) of relationship conflict on group members' tendency to hold on to their initial opinions (Hypothesis 3). Finally, we again predicted that the biases in information use would be due to a reduced motivation to process information systematically (Hypothesis 4a) and a reduced perceived ability to cope with the conflict (Hypothesis 4b).

Participants, Design, and Procedure

109 undergraduate students participated as part of a course requirement. The design consisted of one manipulated factor with two levels (relationship conflict present vs. relationship conflict absent). Like in Study 1 we induced a task conflict for all participants. Participants were randomly assigned to the experimental conditions.

The decision-making task and the procedure to induce a task conflict were identical to the first study. Yet, instead of measuring relationship conflict, we manipulated the presence (vs. absence) of a relationship conflict using a procedure adapted from Lücken and Simon (2005). More specifically, after participants were seated in separate cubicles, they were asked to rate the beauty (on a scale of zero to 100) of a set of paintings. This set of paintings consisted the work of four different artists, and for each of the four artists, the participants were presented three paintings. The paintings were presented one-by-one on the participants' computer screen and for each of the four artists, the computer automatically calculated the participant's average rating. These four average scores were then presented to the participants on their computer screen, and the participants' "preferred artist" (the artist who on average received the highest ratings of the participant) was clearly highlighted. Next, we invited participants to discuss their ratings with their group members as a way for them to get to know each other. Participants were asked to communicate via instant messaging with their group members about their preferred artist, and about the reasons why they appreciated this artist the most.

At this stage, we manipulated the presence versus of absence of relationship conflict. The participants in the non-relationship conflict condition were met with agreeable responses because the other group members preferred the same artist (see Appendix B). By contrast, participants in the relationship conflict condition were confronted with group members who disagreed about the preferred artist, and they received negative personal messages from their group members based on their artistic preferences. For example, in the relationship conflict condition, when referring to the participants' preferred artist [artist 1], the group members argued 'I could probably produce stuff like those other artists' and 'pretty much any poser or try-hard would "appreciate" artist 1' (see Appendix B for the complete text of these messages). In line with self-verification theory we expected that participants would feel this relative harsh scrutiny of their artistic preferences as a negative assessment of the self. We therefore expected this disagreement to elicit more anxiety than just a general difference of opinion and to make group members more likely to take the disagreement personally and, thus, to perceive it as a relationship conflict.

Following the discussion of the paintings, and in order to examine the effectiveness of the relationship conflict manipulation, participants were presented the same five items that were used in Study 1 to measure perceived relationship conflict ($\alpha = .88$). Thereafter, the same procedure as in Study 1 commenced, the only difference being that throughout the study participants continued to communicate through text-messages instead of video-recordings. Because the reactions were sent via text-instead of video-messages, in contrast to the Study 1, the participants in Study 2 were not aware of their group members' gender.

Results

Manipulation checks

Task conflict. We content-analyzed the text messages to check whether participants initially opted for Mr. X. The results showed that 105 of the 109 participants initially thought that it was Mr. X who caused the accident. As in study 1, the data of the four participants who did not opt for Mr. X were excluded from further analyses. Content analyses of the final decisions showed that seven participants in the relationship conflict

condition, and four participants in no-relationship conflict condition, did not provide one specific final decision but, for example, simply stated ‘all were guilty’, and therefore these participants were excluded from the analyses. The final sample size consisted of 94 participants who were divided equally across the two conditions. Analyses of the perceived level of task conflict ($\alpha = .76$) showed that the induction of task conflict was again successful; the average level of reported task conflict was high, and significantly higher than the midpoint on the scale (i.e., 4; $M = 6.08$, $SD = 1.13$, $t(93) = 17.89$, $p < .001$).

Relationship conflict. The manipulation of relationship conflict was successful; directly after the manipulation of relationship conflict participants in the relationship conflict condition ($M = 3.74$, $SD = 1.31$) reported higher levels of relationship conflict than did participants in the non-relationship condition ($M = 1.92$, $SD = .85$), $t(92) = 8.01$, $p < .001$.

Rigidity in decision making

To test our first hypothesis that when group members encounter a task conflict in the presence (compared to the absence) of a relationship conflict, they will more rigidly hold on to their initial opinion, we estimated a multinomial logistic regression predicting the answer categories with the presence (vs. absence) of relationship conflict as a predictor variable. Table 3.4, and Figure 3.1 show that the effect was significant ($\chi^2 = 6.69$, $df = 2$, $p = .035$). Supporting Hypothesis 1, the presence of relationship conflict had a significant effect in predicting whether participants held on to their initial opinion instead of deriving the correct solution ($B = -1.19$, $p = .013$, $OR = .30$). These results indicated that participants were 3.3 times more likely to hold on to their incorrect initial solution (rigidity) instead of choosing the correct solution, when relationship conflict was present compared to when it was absent. Similarly, in the presence of relationship conflict participants were 2.3 times more likely to hold on to their initial opinion instead of adopting one of the solutions of the other group members (i.e., yielding), yet this effect was not significant ($B = -.84$, $p = .146$, $OR = .43$).

Information Processing

To test our second hypothesis that information processing following the task conflict would be affected by the presence (vs. absence)

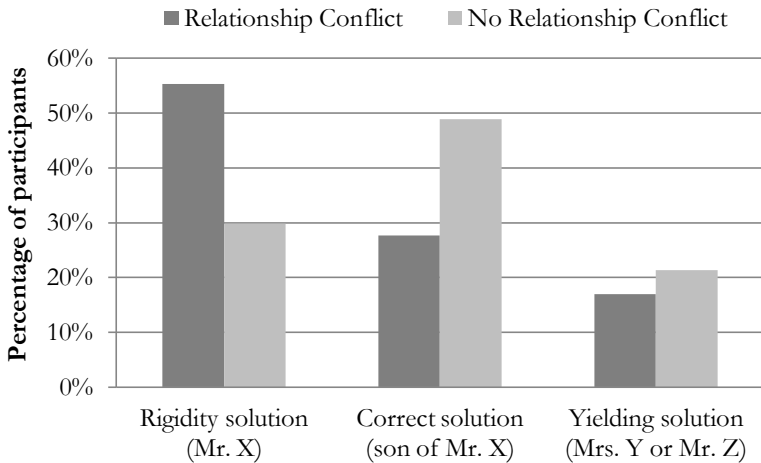
Table 3.3. *Multinomial Logistic Regressions Examining The Decisions Made In Study 2.*

Predictor	Model 1				Model 2				Model 3				Model 4			
	<i>B</i>	<i>SE</i>	<i>OR</i>	<i>Wald</i>	<i>B</i>	<i>SE</i>	<i>OR</i>	<i>Wald</i>	<i>B</i>	<i>SE</i>	<i>OR</i>	<i>Wald</i>	<i>B</i>	<i>SE</i>	<i>OR</i>	<i>Wald</i>
Correct Solution (Son of Mr. X) versus Incorrect 'Rigidity' Solution (Mr.X)																
Intercept	1.69*	.76		4.94	-.93	1.08		.75	-2.63	1.77		2.19	-3.84†	2.30		2.78
Presence of Relationship Conflict	-1.19*	.48	.30	6.14	-.63	.58	.53	1.21	-.99*	.50	.37	3.86	-.73	.60	.49	1.47
Motivation to Process Information									.69**	.26	1.99	6.96	.21	.32	1.23	.41
Coping Ability Information Use					.05***	.01	1.05	17.97					.46	.28	1.59	2.70
													.04**	.01	1.05	11.47
Incorrect 'Rigidity' Solution (Mr.X) versus Incorrect 'Yielding' Solution (Mrs.Y or Mr.Z)																
Intercept	-.51	.92		.30	1.44	1.25		1.33	7.17**	2.69		7.10	8.18*	3.49		5.50
Presence of Relationship Conflict	.84	.58	2.32	2.12	.47	.67	1.61	.50	0.60	0.62	1.83	0.94	.18	.73	1.19	.06
Motivation to process information									-	0.39	0.30	9.41	-1.26*	.50	.28	6.47
									1.21**							
Coping Ability Information Use													.28	.32	1.32	.76
													-.03*	.02	.97	4.37
Correct Solution (Son of Mr. X) versus Incorrect 'Yielding' Solution (Mrs.Y or Mr.Z)																
Intercept	1.18	.88		1.80	.51	1.22		.18	4.54†	2.71		2.81	4.34	3.42		1.62
Presence of Relationship Conflict	-.35	.59	.71	.35	-.16	.63	.85	.06	-0.39	0.60	0.68	0.43	-.55	.70	.58	.61
Motivation to process information									-0.52	0.40	0.59	1.74	-1.06*	.51	.35	4.30
Coping Ability Information Use					.01	.01	1.01	.65					.74*	.29	2.10	6.37
													.01	.01	1.01	.85
Chi-square	6.69*				32.77***				22.37***				49.08***			
<i>df</i>	2				4				4				8			
-2 log likelihood	15.70				74.06				83.91				133.07			
Cox and Snell pseudo R ²	.07				.31				.21				.42			
Sample size	94				89				94				89			

Note. OR = odds ratio, † $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$

of a relationship conflict, participants' (relative) use of the unshared information used by participants to support their final decision was analyzed with one-way ANOVAs with the presence (vs. absence) of relationship conflict as independent variable. In the relationship conflict present condition, the unique information provided by other group members' was used less often ($M = .98$) than in the relationship conflict absent condition ($M = 1.57$), $F(1,92) = 5.88, p = .017, \eta^2 = .06$. Likewise, there was a significant difference in the proportion of own versus other group members' unique information that was used by participants; Compared to those in the relationship conflict absent condition ($M = .46$), in the relationship conflict present condition, participants used relatively fewer information items from others than from themselves ($M = .28$) $F(1,89) = 8.68, p = .004, \eta^2 = .09$ (See Table 3.3). These results support our second hypothesis.

Figure 3.1. *Percentage of participants choosing the rigid (Mr. X), correct (Son of Mr. X), or yielding solution (Mrs. Y or Mr. Z) as a function of presence (vs. absence) of relationship conflict (Study 2).*



Mediation Analyses

The above results showed that that the presence (vs. absence) of relationship conflict during a task conflict predicted (i) whether participants derived the correct solution instead of holding on to their initial suboptimal opinion, and (ii) the extent to which participants used

the information provided by other group members during their decision making. Hence, we continued with a test of our third hypothesis, whether the extent to which participants used the information provided by other group members mediated the effect of the presence (vs. absence) of relationship conflict on decision making. Table 3.4, Model 2 shows that in line with the findings of Study 1, the third hypothesis was again supported: After entering the relative use of other group members' information, the effect of relationship conflict was reduced for the correct solution versus the incorrect 'rigidity' solution. As seen in the third column of Table 3.2, bootstrapping analyses confirmed that the mediation effect was significant.

Motivation to Process Information and Coping Ability. One-way ANOVAs on motivation to process information, and coping ability, with the presence (vs. absence) of relationship conflict as independent variable revealed a significant main effect for the motivation to process information, $F(1, 94) = 4.04, p = .047, \eta^2 = .04$, yet not for perceived coping ability, $F(1, 92) = .01, p = .95, \eta^2 = .00$, see also Table 3.4. Subsequent mediation analyses tested whether group members' motivation to process information mediated the effect of the absence (vs. presence) of relationship conflict on information processing. After entering motivation as a mediator ($\beta = .363, t(88) = 3.808, p < .001$) and coping ability as a control variable ($\beta = .328, t(88) = 2.144, p = .035$), the effect of relationship conflict was indeed reduced ($\beta = -.216, t(88) = -2.285, p = .025$). As shown in Table 3.2, bootstrapping analyses showed that the mediating effect of motivation to process information systematically was again significant, supporting Hypothesis 4a. In contrast to Study 1, we did not find support for Hypothesis 4b.

Additional analyses. We also examined the main effects of the two mediating variables on decision making. We found that motivation to process information ($B = .66, p = .012, OR = 1.926$), and coping ability ($B = .56, p = .017, OR = 1.757$) predicted whether participants chose the correct solution versus the incorrect 'rigidity' solution. We then conducted mediation analyses to test whether motivation to process information mediated the effect of the presence (vs. absence) of relationship conflict on decision making. The results of Model 3 in Table 3.3 show that after entering group members' motivation to process information, the effect of the relationship conflict manipulation was indeed reduced for the correct

solution versus the incorrect ‘rigidity’ solution. As seen in Table 3.2, the mediating effect was significant. To test whether the effects of motivation and coping ability on decision making, in turn, was mediated by information processing, we also entered information processing in the model. As can be seen in Model 4 in Table 3.3, and the results of bootstrapping analyses in Table 3.2, information processing indeed mediated the effect of motivation and coping ability on decision making.

Table 3.4 *Means And Standard Deviations - Study 2*

Measure	Condition			
	Relationship Conflict		No Relationship Conflict	
	<i>N</i> = 47		<i>N</i> = 47	
Motivation to process information	5.69 ^a	(1.17)	6.12 ^a	(0.89)
Coping ability	4.39	(1.15)	4.37	(1.22)
Use of others’ unique information	0.98 ^a	(1.05)	1.57 ^a	(1.31)
Use of own unique information	1.74	(0.82)	1.57	(0.85)
Relative use of other’s vs. own information	.28 ^a	(.27)	.45 ^a	(.29)

^a Difference between conditions $p < .05$

Discussion

In Study 2, we manipulated the presence (vs. absence) of a relationship conflict in combination with an experimental induction of a task conflict. In line with the results of the first study we found support for our first hypothesis that, compared to deriving the correct solution, participants were more likely to hold on to their initial suboptimal solution when the task conflict co-occurred with a relationship conflict. Again, this effect was mediated by more biased use of information; In the presence of a relationship conflict, participants were less likely to use the information provided by others (relative to their own) in their final decision (supporting Hypothesis 2 and 3). Replicating the findings of Study 1, we again found that the biased use of information was due to a reduced motivation to process information systematically. In contrast to the findings of Study 1, we did not find that the presence of relationship conflict made participants feel less able to cope with the task conflict, so

the mediating effect of conflict-related coping appraisals was not supported. One possible explanation may be that in the relationship conflict condition, participants used the relationship conflict as a reference point and therefore perceived the task conflict as not very stressful. Yet, supporting the importance of the appraisal of the task conflict as a threat, we did again find that conflict-related coping appraisals led to more biased information processing, as well as more preference-consistent decision making. Overall, Study 2 showed strong support for the damaging effect of relationship conflict on the link between task conflict, information processing, and decision making. Moreover, Study 2 replicates and extends Study 1 by showing that, in addition to the misinterpretation of a task conflict as a relationship conflict, the ‘actual’ presence (vs. absence) of relationship conflict during a task conflict also causes more biased information processing and rigidity during decision making.

General Discussion

The results presented in this chapter show that the presence of relationship conflict affects group members’ motivation and ability to deal with diverging task-related viewpoints and causes rigidity and biased information processing and, thereby, plays a crucial role in the link between task conflict and decision making. Many researchers and practitioners consider task conflicts a potential asset to improve a group’s performance and creativity (e.g., Amason, 1996; Deutsch, 1973; Klein, 2008), yet the evidence for this relation has been inconsistent (e.g., De Dreu & Weingart, 2003a; Jehn & Bendersky, 2003). To shed more light on the somewhat controversial relationship between task conflict and group decision-making, several reviews of the intragroup literature have suggested that it is crucial to examine the factors that may moderate the link between task conflict and group decision-making (e.g., Jehn & Bendersky, 2003; De Wit et al., 2012). In line with this suggestion, the present research investigated how relationship conflict affects the link between task conflict and decision making. We found that when a task conflict occurred in the presence (compared to the absence) of a relationship conflict, group members showed more biased information-processing and were more likely to hold on to suboptimal solution alternatives. More specifically, we found that the level of perceived relationship conflict during a task conflict (Study 1), and the ‘actual’

presence (vs. absence) of a relationship conflict (Study 2), are related to biased information processing and rigidity in decision making.

In both studies we found that biased information processing mediated the effect of the co-occurrence of task and relationship conflict on decision making. More specifically, because they were less likely to use the information provided by others, those who perceived relatively high levels of relationship conflict (Study 1) and those who had just encountered a relationship conflict (Study 2) were less likely to yield and/or derive the correct solution, instead of rigidly holding on to an initial incorrect opinion. In Study 1, two different processes (motivation to process information systematically and perceived ability to cope with a task conflict) were found to explain the harmful effect of the co-occurrence of task and relationship conflict on information processing. More specifically, perceived relationship conflict was negatively related to motivation to process information systematically as well as the perceived ability to cope with a task conflict, and both were negatively related to the extent to which participants used the information provided by others relatively to information from themselves. Study 2 replicated the effects for motivation. Because our manipulation of relationship conflict did not affect group members' perceived ability to cope with a task conflict, no mediation for threat appraisal was found in Study 2, yet the effects of conflict-related coping ability on information processing and decision making were identical to those in Study 1. Together these results imply that group members are less likely to shift from their initial standpoint to a more correct decision alternative or to adopt another one's standpoint when a task conflict co-occurs with a relationship conflict. This because they are less motivated to systematically process information and/or they feel less able to cope with a task conflict, and, therefore, make less use of information provided by others in their final decision.

Implications

In contrast with the commonly held belief that task conflict can enhance group decision quality through the debate and exchange of divergent thoughts and viewpoints, two recent meta-analyses suggested that a consistent and generalizable positive relationship between task conflict and decision-making quality does not exist (De Dreu & Weingart, 2003a; De Wit et al., 2012). More specifically, whereas some studies did

indeed find that intragroup disagreement enhances group functioning (Jehn, 1994; Li & Hambrick, 2005; Pelled, Eisenhardt, & Xin, 1999), several others found conflict to be a liability for group performance (e.g., Jehn, Northcraft, & Neale, 1999) or found neither a positive or negative relationship (e.g., Barsade, Ward, Turner, & Sonnenfeld, 2000). The current study moves beyond the usually proposed uniform positive or negative relationship between task conflict and performance, and proposes a more complex picture. In line with previous studies that indicated that individuals differ in the way they perceive disagreements (e.g., Jehn & Chatman, 2000; Pinkley, 1990), we recognize that people differ in their reactions to a task conflict in the presence (vs. absence) of relationship conflict. Moreover, we recognize that these different reactions (e.g., rigidity vs. yielding) play an important role in the association between task conflict and group outcomes. Herewith, the current research addresses two important limitations of past conflict research. First, by illustrating the differences between individuals' perception of one and the same conflict, it challenges the implicit assumption in past conflict research that conflict parties perceive a conflict in a similar way (e.g., Amason, 1996; Jehn, 1994 cf. Jehn & Chatman, 2000; Jehn, Rispens, & Thatcher, 2010). Second, by illustrating that the way people perceive and experience a task conflict can be an important determinant of how conflicts affect team performance it addresses the often assumed uniform relation between conflict and performance.

This research also contributes to the literature on hidden profile situations. The majority of the research on hidden profile situations has focused on the dominance of shared information during group discussions and the failure of groups to exchange and discuss important information possessed by only one or only a few group members. More recently, attention has been directed at the difficulties of group members to derive the correct solution even when all information is shared and known (e.g., Greitemeyer & Schulz-Hardt, 2003). For instance, it has been shown that when there is no process accountability, or low epistemic motivation, group members show poorer and less systematic information processing and, thereby, lower decision quality compared to situations where group members are held for the decision process (Scholten et al., 2007). Likewise, group members tend to hold on to their initial suboptimal solutions even though all information is shared (Greitemeyer

& Schulz-Hardt, 2003). The results of the current research extends these studies, showing that the co-occurrence of a task and relationship conflict augments this initial preference effect, for instance, because it undermines group members' motivation to process information systematically and to cause group members to focus too much on their own information.

Finally, in the vast literature on intragroup conflict relatively little attention has been paid to stress and threat appraisals (see Dijkstra et al., 2005 for an exception). Yet, both studies presented in this research emphasize that conflicted-related coping appraisals are strongly related to information processing and decision making in the context of an intragroup conflict. In line with studies on threat rigidity (e.g., Kamphuis, 2010; Kassam et al, 2009), participants were more likely to hold on to an initial solution instead of deriving the correct solution when they felt relatively threatened by the conflict. Moreover, the findings supported recent work on threat and confirmatory information search (Fischer et al., 2011), that has shown that congruent threat (threat that is contextually related to the subsequent decision) results in increased levels of confirmatory information search in a decision-making context.

Limitations and Future Research

To induce a task conflict in the present research, the discussion between the group members was experimentally controlled. This controlled, as opposed to a real, interaction had three important advantages. First, it enabled us to make sure that all participants were confronted with exactly the same task conflict. In this way, we could cancel out differences between groups and conflicts, such as the emotionality of the conflict, the acquaintanceship of group members, and the duration of the debate. Secondly, the controlled interaction allowed us to make sure that all the unshared information necessary to derive the correct solution would be available to the participants. This allowed us to exclude an alternative explanation of the effects on decision making, namely whether the information was actually shared or not. Thirdly, as all the unshared information necessary to derive the correct solution was available to the participants, we could directly assess the extent to which individuals processed the information provided by other group members in their decision making.

Yet, an important limitation of the design in the present research is that the group members never interacted directly. Likewise, the conflicts consisted of only one round of discussion, which meant that group members could not go back and forth on an issue. Hence, there was not a full decision process involving extensive collective information processing, and only a low level of differentiation could take place in the current set-up (cf. integrative complexity theory; Suedfeld, Tetlock, & Streufert, 1992). In relation to this in real groups group members can interact more directly, and are more interdependent on each other, while the task conflicts arising in such situation are also often more complex, with a greater variety of opinions, more people involved, and more lengthy discussions. Recent research, however, provides initial evidence for the generalizability of our results to settings outside the laboratory. Shaw et al. (2011), for instance, found among real organizational teams that the association between task conflict and group member performance was more positive when levels of relationship conflict were low rather than high. Likewise, Janssen et al. (1999) found that group members reported to be more likely to push through their own ideas when high levels of task conflict occurred alongside high (vs. low) levels of relationship conflict and they and their group members did not share a superordinate goal. Future research should, however, attempt to integrate these different insights and examine in real teams whether the damaging effect of relationship conflict on the link between task conflict and group decision-making can indeed be explained by group members' increased rigidity in holding on to initially preferred task-related viewpoints.

Another issue worth discussing is that in the current research we did not manipulate the presence versus absence of a task conflict. That is, task conflict was held constantly high, and we only varied the level of relationship conflict. The advantage of manipulating task conflict would have been that we could test whether relationship conflict also has a damaging effect when task conflict is absent. Moreover, it would allow us to examine whether task conflict would facilitate superior decision making over no task conflict. Yet, although we acknowledge that this is a limitation in our research design, there are two reasons why we did eventually choose only to manipulate relationship conflict, and to hold task conflict constant. First, our main aim with this research was not so much to demonstrate a damaging effect of relationship conflict *persé*, nor

to demonstrate that task conflict would lead to superior decision making than no task conflict. Instead, our aim was merely to examine whether people respond differently to a task conflict in the presence (vs. absence) of a relationship conflict. Second, examining a situation where task conflict was absent would also have made it more difficult to include one of our proposed mediators (i.e., conflict related threat appraisals) because it applies only applies to situations where there is task conflict.

Yet, to address this limitation of our design, we recently conducted a follow-up study in which we used the same design as in Study 2, except that task conflict was absent (rather than present). The design again included one manipulated factor with two levels (relationship conflict present vs. relationship conflict absent). The results showed that relationship conflict did not have a damaging effect when task conflict was absent. Moreover, in these two new conditions - where there was no task conflict - participants were significantly more likely to hold on to their initial solution (rather than to yield or derive the correct solution) compared to the two conditions of Study 2, where task conflict was present. A closer look at the data also showed that this result was contingent on the presence of relationship conflict. More specifically, individuals were more likely to hold on to their initial solution (instead of choosing the yielding or the correct decision) when task conflict was absent (rather than present) but only when the task conflict occurred in the absence of relationship conflict. In sum, these results indicate that in the absence of task conflict, people are not very likely to change an incorrect initial opinion, yet that the likelihood that they will change their opinion increases when there is task conflict, but only when the task conflict is not accompanied by a relationship conflict.⁷

⁷ 101 individuals (74 women and 27 men) participated in the follow-up study and were randomly divided across a relationship conflict present condition (N = 52) and a relationship conflict absent condition (N = 49). The texts we used to make sure task conflict was absent are reported in Appendix A. The results showed that in the absence of task conflict, the decisions that the participants made were unaffected by the presence (vs. absence) of relationship conflict, $\chi^2 = 1.41$, $df = 2$, $p < .494$ and that in both conditions, 67.3% of the participants held on to their initial viewpoint. This was significantly higher than in the two “task conflict present” conditions of Study 2 in which the percentage of participants holding on to their initial viewpoint was 42.6%, $\chi^2 = 13.42$, $df = 2$, $p < .001$. Finally, a closer examination of the data showed that this result depended on the presence of relationship conflict; the tendency of individuals to hold on to their initial viewpoint (instead of choosing the yielding or the correct decision) only dropped significantly when the task conflict occurred in the absence of relationship conflict (29.8%, χ^2 s > 13.54, $ps < .001$), but not when task conflict occurred in the presence of relationship conflict (55.3%, χ^2 s < 1.47, $ps > .21$).

Another restriction of the chosen design was that during the task-related disagreement, participants' initial solution to the dilemma was always incorrect. Therefore, 'rigidity' was always dysfunctional for decision-making quality. What we do not yet know, and what future research could address is what happens if participants' initial solution is actually correct. When an initial solution is correct, then rigidity (and the co-occurrence of task and relationship conflict for that matter) might become beneficial for decision-making quality. Another limitation is that although we expected and found in Study 1 that perceived relationship conflict affected individuals' appraisal of the task conflict as a threat, this finding was not replicated in Study 2. More precisely, in Study 2 the actual co-occurrence did not affect individuals' threat appraisals. This finding seems to suggest that appraisals of task conflict as a threat are only augmented when task and relationship co-occur due to misinterpretations of task conflict. Despite this inconsistency, across the two studies we did find that threat appraisals had an important effect on information processing and decision making. Because threat appraisals are associated with distinct patterns of cardiovascular reactivity (Blascovich & Mendes, 2000; Blascovich & Tomaka, 1996), future research might examine more precisely when group members react more threatened to a task conflict and also investigate more broadly whether distinct vascular reactions might explain how conflicts affect decision making (see also De Wit, Scheepers, & Jehn, 2012).

Future research could also more closely examine the causal pathway between information processing and decision-making. In line with common theorizing on group decision-making (see for example also Brodbeck, et al., 2006) we assumed a causal pathway from information processing to decision-making (i.e., individuals held on to their initial opinion because they processed information in a biased manner). Yet, on the basis of our research the opposite causal pathway (from decision-making to information processing) cannot be fully excluded. Indeed, group members may have ended up justifying their decision by only mentioning pieces of information that supported their decision. Because we did not ask the participants to list all the pieces of information they remembered, we do not know whether the participants only mentioned those pieces of information during decision-making because that were the only items they processed, or because that were the only items that

supported their decision. Therefore, an idea for future research might be to also examine individuals' ability to recall as many pieces of unshared information as they can. That is, when information processing mediates the effect on decision making, individuals can be expected to recall relatively few pieces of unshared information (individuals will primarily mention their own information because that is the only information they processed). Yet, when decision making mediates the effect on information processing, individuals can be expected to recall relatively many pieces of unshared information (individuals process all the information but only mention their own information because that supports their initial opinion).

Another issue to reflect on is that an alternative prediction would be that relationship conflict not only causes group members to become more rigid in holding on to their initial viewpoint, but also to become more likely to yield in deference of other group members. That is, because the presence of relationship conflict is likely to induce a competitive mindset, it may cause individuals to frame the task in terms of the question "Who is right?", rather than the question "What is the right answer?". As a result of this "polarization", people may fail to search for an integrative solution for the diverging pieces of information, and instead may focus on the individual preferences (both their own and that of the other group members) with the idea that either they or their group members must be right. In this way, group members thus would fail to derive the correct solution because they only see two options: yielding (if they think one of the others is right) or rigidly holding on to their initial opinion (if they think they are right themselves). The results of both studies presented in the article indicated, however, that the presence of relationship during a task conflict only made individuals more likely to rigidly hold on to their initial viewpoint and, thus, not to make participants' more (or less) likely to yield compared to deriving the correct solution. Hence, the results of the present research are not in keeping with such a "polarization" explanation.

Future research could also examine whether our findings can be generalized to relationship conflicts that involve other group members than the individuals themselves. On the one hand, one might argue that our findings may be restricted to relationship conflicts in which individuals are involved themselves. This because a relationship conflict

may only induce a competitive mindset, and cause a reduced motivation to systematically process the group members' information, when group members are involved themselves. Yet, on the other hand, one might argue that our findings could also apply to relationship conflicts that involve other group members than individuals themselves. This because in such cases relationship conflicts may cause individuals to become frustrated with their group members, which might reduce their willingness to consider what these group members have to say. Hence, future research should examine whether individuals need to be involved in a relationship conflict for individuals to become rigid in holding on to their task-related viewpoints and more biased in their information processing.

Another idea for future research is to more directly compare the impact of the two different forms of relationship conflict described in this article on group decision making (i.e., relationship conflicts that are triggered by a task conflict, and relationship conflicts that concern a topic unrelated to the topic of the task conflict). One possibility is to run a study in which first a task conflict is induced, and subsequently a relationship conflict is induced that either directly follows from the task conflict, or concerns a topic unrelated to the task at hand. In both these conditions individuals are likely to show more rigidity in holding on to initial task-related viewpoints compared to a situation free of relationship conflict. Yet, such a study could examine whether relationship conflicts that arise from a task conflict have a stronger negative impact on decision making and information processing than relationship conflict that arise independently from a task conflict. Moreover, such a study could be used to examine possible interventions to curb the negative effects of both forms of relationship conflict.

Bradley, Postlethwaite, Klotz, Hamdani, and Brown (2012), for example, found that task conflicts have a more positive impact on group performance when group members experience high levels of psychological safety (i.e., the shared belief held by members of a team that the team is safe for interpersonal risk taking; Edmondson, 1999). Presumably, this is because team members working in a psychologically safe environment "feel a sense of openness and avoid taking task disagreements personally" (Bradley et al., 2012, p. 152). To prevent group members to misinterpret task conflict as a relationship conflict, interventions should therefore be aimed at increasing feelings of

psychological safety. More specifically, teams could support training aimed at coaching group members to approach and manage other group members' diverging viewpoints in an open and considerate manner. Moreover, it should train leaders to foster an environment that is safe for interpersonal risk taking, for example, by stimulating leader inclusiveness (i.e., words and deeds exhibited by leaders that invite and appreciate others' contributions; Nembhard & Edmondson, 2006). Together these interventions may not only make group members feel more at ease when they want to express a diverging viewpoint, but also make them approach others' viewpoints with a less competitive mindset which, in turn, makes them less likely to become defensive when someone disagrees. Importantly, interventions aimed at increasing feelings of psychological safety may also decrease the likelihood of an unrelated relationship conflict to spill-over to a task conflict; when people feel psychologically safe, they might be more like to also accept disagreements on a more personal level, thereby preventing such relationship to escalate and to trigger people to hold on to an initial viewpoint too rigidly during task conflict.