negotiation and conflict management research

INTERNATIONAL ASSOCIATION FOR CONFLICT MANAGEMENT

Negotiation and Conflict Management Research

Buffering Against the Detrimental Effects of Demographic Faultlines: The Curious Case of Intragroup Conflict in Small Work Groups

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Keywords
demographic faultlines, task conflict, relationship conflict, process conflict, ethnicity, group performance.

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Abstract

Group faultline literature suggests that subgroups impede group functioning. We propose that team conflict may buffer the detrimental effects of faultlines on group performance. We draw on social categorization and group process theories suggesting that the negative effects of faultlines are due to increased competition and decreased communication across subgroups and can be diminished with cross-subgroup information exchange and elaboration. We propose that intragroup conflict in small groups will decrease negative effects of demographic faultlines because detecting conflict and engaging in conflict management require cross-subgroup communication and information elaboration. In Study 1, using student groups we found that relationship, task, and process conflict buffered the negative effect of demographic faultline strength on group performance. In Study 2, we manipulated conflict and group faultlines (ethnic faultlines vs. no faultlines) and found that group conflict buffered the negative effect of faultlines on group performance. Theoretical contributions and practical implications are discussed.

Small groups continue to dominate work models in secondary schools, universities, and organizations, compelling scholars to examine identity, conflict, and subgroup processes that can impede group performance. Research on group faultlines, "hypothetical dividing lines that may split a group into subgroups based on one or more attributes" (Lau & Murnighan, 1998, p. 328), offers many valuable insights. Subgroup formation can hinder group performance through increased intragroup competition and decreased communication, information sharing, and motivation to contribute (Bezrukova, Thatcher, Jehn, & Spell, 2012; Lau & Murnighan, 2005; Thatcher, Jehn, & Zanutto, 2003; Thatcher & Patel, 2012). Yet researchers have uncovered several internal mechanisms that can bridge faultline subgroups, lessening their negative impact on group process and performance, including team identification, goal structure, shared objectives, and cultural alignment (Bezrukova, Spell, Caldwell, & Burger, 2016; Van Knippenberg, Dawson, West, & Homan, 2011).

Further, the categorization–elaboration model (CEM) combines social identity with information processing theories to predict that categorization pressures and negative effects of faultlines can be avoided when groups capitalize on their diverse knowledge and perspectives through information elaboration (Bezrukova, Jehn, Zanutto, & Thatcher, 2009; Homan, van Knippenberg, Van Kleef, & De Dreu, 2007; Van Knippenberg, De Dreu, & Homan, 2004). In other words, when groups exchange and discuss

Volume 10, Number 1, Pages 28–45
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information and communicate across subgroups, the negative effects of demographic faultlines can be diminished. We propose that the experience of conflict will allow groups with demographic-based faultlines to engage in such cross-subgroup information elaboration that can decrease negative effects of subgrouping.

Based on CEM and conflict theory, we suggest that team conflict will moderate the effect of faultlines, buffering the negative effects of strong demographic faultlines on group performance. We build our argument based on research emphasizing that subgroup formation can sometimes activate cross-subgroup attention and information exchange (Cooper, Patel, & Thatcher, 2013; Gibson & Vermeulen, 2003; Phillips, 2003). We incorporate the concept of constructive controversy, using conflict to bridge interests through open discussion and critical examination of ideas, to explain how conflict may decrease the negative effects of demographic faultlines on group performance (Deutsch, 2006; Tjosvold, 1998; Bendersky, Bear, Behfar, Weingart, Todorova, & Jehn, 2014). Because recognizing or engaging in conflict necessitates communication to uncover differences (Folger & Poole, 1984), we conceptualize conflict as a group characteristic that involves cross-subgroup engagement and may buffer the negative effects of faultlines on group performance.

Below, we briefly review the faultline literature, focusing on research that measured conflict and/or identified moderators of the faultline–group performance link. We then review conflict literature, highlighting research that identifies positive effects of group conflict, to develop our prediction that conflict can buffer the negative effects of faultlines on group performance. We present two studies that measure (study 1) and manipulate (study 2) demographic faultlines. Our results support our prediction and offer contributions to the faultline literature by identifying conflict as a moderator buffering negative effects of demographic faultlines on small group interdependent knowledge work.

Theory Development

Demographic Faultlines and Group Performance

Faultline theory explains the formation of subgroups in teams based on alignment of demographic or other shared characteristics (e.g., attitudes, seniority, or information). Faultlines emerge through processes of self-categorization, social identification, and similarity–attraction whereby individuals within teams notice and identify with others who are similar (Lau & Murnighan, 1998; see Thatcher & Patel, 2012 for a review of these and other theoretical mechanisms underlying faultlines). The literature has generally shown that faultlines impede group performance as the emergence of subgroups can lead to ingroup–outgroup competition, restricted communication, and decreased information sharing (Bezrukova et al., 2012; Homan et al., 2008; Jehn & Bezrukova, 2010; Lau & Murnighan, 2005; Sawyer, Houlette, & Yeagley, 2006; Thatcher et al., 2003). In recent years, research on faultlines and subgroups has unpacked these basic relationships by uncovering a variety of faultline types, measures, mediators, moderators, and consequences (Bezrukova et al., 2009, 2016; Shaw, 2004; Thatcher et al., 2003). As a full review of faultline theory is beyond the scope of this manuscript, we develop our argument for conflict as a moderator focusing on research about bridging faultlines, or lessening negative effects on group performance.

Because faultlines undermine group processes and performance due to poor communication and competition between subgroups (Lau & Murnighan, 1998, 2005; Sawyer et al., 2006; Thatcher et al., 2003), bridging faultlines requires inducing a superordinate team identity and/or effective cross-subgroup interaction. Thus, the negative faultline–performance relationship is attenuated when groups have a strong team identity (Bezrukova et al., 2009), and the positive relationship between faultlines and group conflict in teams with low identification is not significant in teams with high identification (Jehn & Bezrukova, 2010). Other moderators that limit the negative effects of faultlines include team members' openness to experience (Homan et al., 2008), team leader's diversity beliefs (Schölmerich, Schermuly, &

Deller, 2016), social category salience (Meyer, Shemla, & Schermuly, 2011), and strength of ethnic status subgroups (Leslie, 2014).

The categorization–elaboration model (CEM) explains that effective performance in diverse groups depends on taking advantage of diverse knowledge and perspectives, a process that can be disrupted by the emergence of subgroups that generate conflict and limit communication (Van Knippenberg et al., 2004, 2011). CEM combines elements of both categorization and information processing theories to explain variation in the effect of faultlines on group process and outcome. This perspective is supported by research showing that cross-subgroup interactions lessen the negative effects of faultlines on team performance (Gibson & Vermeulen, 2003; Sawyer et al., 2006). In a study of academic research teams, Ren, Gray, and Harrison (2015) show that when subgroups were linked by bridging friendship ties, creating opportunities for cross-subgroup interaction, negative effects of faultlines on group performance were extinguished. But when subgroups were marked by breaching animosity ties, limiting cross-subgroup interaction, the effect of faultlines on group performance became more negative. Experiencing conflict also provides a channel for cross-subgroup interaction that can facilitate cognitive elaboration and reduce the negative effects of faultlines, particularly when subgroups have a common goal to direct constructive conflict.

Faultlines and Group Conflict

Conflict is generally defined as perceived differences or incompatibilities among group members (Jehn & Bendersky, 2003). Groups researchers have identified three distinct types of conflict: *Task conflict* involves disagreements over work-related issues; *relationship conflict* includes disagreement about interpersonal issues; and *process conflict* refers to disagreements over how work gets done (Amason, 1996; Jehn & Mannix, 2001; Thatcher & Patel, 2012). Lau and Murnighan's (1998) theory that conflict is a direct outcome of faultlines is supported for relationship and process conflict by many empirical studies (e.g., Bezrukova et al., 2009; Li & Hambrick, 2005; Polzer, Crisp, Jarvenpaa, & Kim, 2006), but not by all. Some studies suggest but do not test these relationships (Jehn & Bezrukova, 2010), and contrary results include a negative association with relationship conflict (Lau & Murnighan, 2005), and no effect of faultlines on task conflict (Spell, Bezrukova, Haar, & Spell, 2011). Of course, there are many possible reasons for inconsistent empirical findings, including variation in samples, methods, task type, group context, and measures, as well as the presence of moderators (see Thatcher & Patel, 2012 for a review). Our point is that the role of conflict in faultline theory remains worthy of additional theorizing and investigation.

Thatcher et al. (2003) report a curvilinear faultline–conflict relationship, such that groups with moderately strong faultlines experience low levels of relationship and process conflict relative to groups with weak or strong faultlines (and no effect for task conflict). Other research reports that tenure-age faultlines increased conflict but tenure-race faultlines decreased conflict (Choi & Sy, 2010). Noting that research on group diversity and team learning has found that cross-subgroup information exchange and elaboration can be stimulated by subgroups' desire for distinctiveness as well as subgroup support (Gibson & Vermeulen, 2003; Phillips, 2003), Cooper et al. (2013) suggest that faultlines do not always lead to group conflict.

Further, de Wit, Greer, and Jehn (2012) offer reasoning for how each type of group conflict might improve, rather than hinder, group performance. Several meta-analyses report that relationship and process conflict are detrimental to group performance, whereas results for task conflict have been inconsistent (see De Dreu & Weingart, 2003; de Wit et al., 2012; O'Neill, Allen, & Hastings, 2013, for meta-analyses). The impact of conflict on group performance depends not only on conflict type and task type, but also on group interdependence, group norms for open discussion, and conflict openness (Bradley, Anderson, Baur, & Klotz, 2015; Brett, 1991; Tjosvold, 1991). Thus, team researchers agree that intragroup conflict can be constructive when it is open,

engaging, and direct, but not too oppositional (Deutsch, 2006; Tjosvold, 1998; Weingart, Behfar, Bendersky, Todorova, & Jehn, 2015).

In a recent publication, Bezrukova and colleagues propose conflict as a moderator of the faultline–performance relationship (Bezrukova et al., 2016). In line with social categorization theory, the authors propose that within-team conflict will exacerbate negative effects of faultlines but externally directed conflict at other levels can make the "team" identity salient and bridge subgroups. The researchers measured conflict by content coding and computer-analyzing text from media reports covering 30 major league baseball teams over four seasons, with internal conflict operationalized through disagreements or clashes among teammates or between teammates and coaches or managers. Results demonstrate that in baseball teams, intragroup conflict exacerbates the negative effects of faultlines on performance, whereas organization-level conflict buffers the effect by strengthening team bonds relative to subgroup bonds. While we also propose intrateam conflict as a faultline moderator, our theoretical rationale and predictions depart from Bezrukova et al.

We propose that intrateam conflict will diminish negative effects of faultlines on group performance. Unlike Bezrukova's argument that relies on social identity theory, we argue that conflict prompts communication across subgroups and initiates information processing that can bridge category-based subgroups according to CEM. As noted above, in the absence of conflict, a lack of communication across subgroups may prevent the sharing of information that is helpful for performance in diverse groups (Cartwright & Zander, 1953; Lau & Murnighan, 1998, 2005). It is proposed that facilitating cross-subgroup communication, for example, by elevating psychological safety, can diminish negative effects of faultlines (Nishii & Goncalo, 2008). But, if subgroups disagree about their task goals (e.g., task conflict), they may exchange ideas that allow them to uncover the most effective goal and best solution. Groups that communicate about personal dislikes or disagreements about inefficiencies or duplication of efforts (e.g., relationship or process conflict) may bridge subgroup boundaries and discover opportunities to capitalize on differences and synchronize group efforts. By engaging subgroups, the experience of conflict may buffer the negative effects of faultlines on group performance.

Tjosvold and colleagues note that one of the most robust findings in the team conflict literature is that open discussion and debate characterize constructive conflict (Tjosvold, Wong, & Feng Chen, 2014). While laypeople assume "conflict" means a competitive, win–lose situation, it is precisely through conflict that thinking is challenged and creative solutions are forged (Tjosvold et al., 2014). When groups are linked by a cooperative goal, as small workgroups typically are, and engage in open-minded discussion, conflict can be a constructive force that bridges subgroup boundaries and boosts thoughtful information processing.

Research on minority and majority influence offers further support for our argument. When people are exposed to opposing minority views, they exert more cognitive effort to process information, increasing attention and divergent thinking, and are consequently able to produce more novel solutions and make better decisions (Nemeth, 1986; Nemeth, Personnaz, Personnaz, & Goncalo, 2004). Faultline subgroups are likely to amplify ingroup–outgroup distinctions within the group (Bezrukova et al., 2009), such that "outgroup" opinions may be seen as minority opinions. Thus, when intragroup conflict erupts, faultline subgroups may be particularly attuned to opposing views presented by the other subgroup. In turn, increased attention and processing of opposing views may lead to more novel solutions and hence better group performance in faultline groups that experience conflict.

We thus expect that relationship, task, and process conflict will buffer the negative association between groups faultlines and group performance such that the negative association is weaker when conflict is high (*Hypotheses 1a, 1b, and 1c*).

Study 1 Method

Participants and Procedures

Participants were 188 students (39% men; 27% East Asian, 44% Caucasian, 14% South Asian, and 15% other ethnicity) enrolled in a large organizational behavior course at a Canadian university, forming 47 four-person groups. The class was broken down into six weekly discussion groups with approximately eight teams per section. In line with previous research (Thatcher et al., 2003), groups with members who did not complete the demographics questionnaires were dropped from the study, leaving a total of 40 three- or four-person groups.

The study was conducted as a part of an in-class team learning experience over one academic semester. At the beginning of the semester, students were informed that they would be assigned to four-person groups that would engage in team activities and complete questionnaires over the term. In the third week of the term, we administered a questionnaire assessing students' demographic background, which was used to calculate the strength of group faultlines. In the seventh week of the term, we administered a questionnaire assessing participants' perceived intragroup conflict during their time together thus far (they had completed two experiential tasks and a case analysis in their discussion groups). In the eighth week of the term, participants engaged in an in-class experiential team simulation and completed a team debrief assignment as a group and the assignment was graded by a teaching assistant. The team debrief assignment was a five-page analysis of the team's experience, and we used this group grade as a measure of group performance.

Measures

All measures in Studies 1 and 2 used a 7-point response scale (1 = *not at all*, 7 = *extremely*), unless otherwise noted.

Intragroup Conflict

We used the six-item Intragroup Conflict Scale (Jehn, 1995) to assess relationship conflict (e.g., "How much relationship tension was there in your work group?"; $\alpha = .73$) and task conflict (e.g., "How much conflict of ideas was there in your work group?"; $\alpha = .76$). We assessed process conflict with a three-item scale (e.g., "How often are there disagreements about who should do what in your work group?"; $\alpha = .89$; Jehn & Mannix, 2001).[1]

Group Faultlines

To assess group faultlines, we used Thatcher et al.'s (2003) index of faultline strength, *fau*, which has been used in previous faultline research (e.g., Bezrukova et al., 2009; Cooper, Patel, & Thatcher, 2013). This index is based on multivariate clustering analysis, and it calculates the extent to which the alignment of individual attributes could divide a group into subgroups. The values of faultline strength range between zero and one, with larger values indicating greater faultline strength or potential presence of

[1]Given high correlations between the three dimensions of conflict (i.e., relationship, task, and process conflict), we conducted multilevel confirmatory factor analysis (MCFA) using Mplus 7.0 (Muthén & Muthén, 1998–2012) to test distinctiveness of the three dimensions. The three-factor measurement model displayed an acceptable fit to the data ($\chi^2_{[48]} = 88.52$, CFI = 0.95, RMSEA = 0.075; RMSEA value no greater than .08 suggests an acceptable fit [Hu & Bentler, 1999]). Moreover, we compared our hypothesized three-factor model with a more parsimonious one-factor model whereby items of relationship, task, and process conflict were loaded on the same factor ($\chi^2_{[54]} = 180.325$, CFI = 0.83, RMSEA = 0.13). Model comparison indicates that the hypothesized three-factor model was a significant improvement over the one-factor model ($\Delta\chi^2_{[6]} = 91.81$, $p < .001$). Overall, the results support the distinctiveness of our dimensions of conflict and our analytical strategy to examine them separately.

subgroups. Given that we were interested in demographic faultlines, we assessed and used the following four demographic characteristics of team members to measure faultlines: gender, whether they were born in Canada or not, their broad ethnic group (i.e., East Asian, North American, South Asian, and others), and whether English was their first language or not. These demographic characteristics were chosen because they were expected to produce variance in our sample (i.e., our students were reasonably ethnically diverse, whereas, for example, we did not expect age differences) and because these characteristics have been frequently used for measuring demographic faultline strength in past research (e.g., Bezrukova et al., 2009; Li & Hambrick, 2005). The values of faultline strength in the current study ranged from 0.28 to 0.83. Higher values indicate a stronger demographic faultline.

Group Performance

To asses group performance, we used the team debrief assignment grade ($M = 87.33$, $SD = 6.36$), which was graded by a teaching assistant. Possible grades for the case analysis ranged from 0 to 100, with zero indicating the lowest possible grade and 100 indicating the highest possible grade.

Study 1 Results

Analytical Approach

We tested our hypotheses at the group level. Our group performance variable was measured at the group level, and faultline strength was calculated at the group level. However, intragroup conflict perceptions were measured at the individual level. Before aggregating to the group level, we computed intraclass correlations (ICCs) to determine the reliability of group-level intragroup conflict and thus the appropriateness for aggregation. We first computed ICC(1), which represents the statistical agreement among group members regarding a rated variable (Bliese, 2000). Relationship, task, and process conflict had ICC(1) values of .42, .24, and .12, respectively. The F statistic associated with ICC(1) was significant for relationship conflict, $F(17, 54) = 3.89$, $p < .01$, and task conflict, $F(17, 54) = 2.23$, $p < .05$, and significant at $p = .10$ for process conflict, $F(16, 51) = 1.55$, $p = .10$, attesting to the agreement among group members on the levels of intragroup conflict. We also computed the James, Demaree, and Wolf (1993) index of within-group agreement $r\mathrm{WG}_{(j)}$. The average $r\mathrm{WG}_{(j)}$ values were .77, .75, and .77, respectively, for relationship, task, and process conflict. $r\mathrm{WG}_{(j)}$ values of .70 or above are conventionally used to justify aggregation (Bliese, 2000). These combined results of ICCs and rWG values provide justification for aggregation of intragroup conflict to the group level. Table 1 presents descriptive statistics for all variables and zero-order correlations.

Hypothesis Testing

Table 2 presents the results of the hierarchical multiple regression analyses testing the interaction between faultline strength and relationship, task, and process conflict on group task performance.[2] In the final step of the regression analysis, the interaction of faultline strength with (a) relationship conflict, $b = 11.93$, $p < .01$ ($f^2 = 0.19$), (b) task conflict, $b = 9.77$, $p < .01$ ($f^2 = 0.15$), and (c) process conflict, $b = 11.61$, $p < .05$ ($f^2 = 0.16$), significantly predicted group performance.

Supporting H1a, a simple-slopes analysis showed that the relationship between faultline strength and group performance was negative and significant when relationship conflict was low, $t(36) = -2.70$, $p < .01$, but not significant when relationship conflict was high, $t(36) = 1.28$, *ns* (see Figure 1). We

[2]Given high correlations among the three dimensions of conflict (task, relationship, and process), we reran our analyses controlling for the other two dimensions of conflict. The results were the same with or without controlling for other dimensions of conflict. As such, we present analyses without any controls.

Table 1
Descriptive Statistics, Zero-Order Correlations, and Alpha Reliability Coefficients (Study 1)

	Mean	*SD*	1	2	3	4	5
1. Faultline strength	0.47	0.24	–				
2. Relationship conflict	2.13	0.89	−.29	(.73)			
3. Task conflict	2.41	0.87	−.24	.79**	(.76)		
4. Process conflict	2.30	0.91	−.23	.75**	.93**	(.89)	
5. Group performance	87.33	6.36	−.25	.20	.02	.10	–

Table 2
Multiple Regression Analyses: The Moderating Effect of Relationship, Task, and Process Conflict on the Relationship between Faultline Strength and Group Performance (Study 1)

DV: Group Performance	Model 1	Model 2
Faultline strength	−5.58 (4.39)	−2.49 (4.19)
Relationship conflict	0.99 (1.17)	2.30 (1.18)
Faultline strength × relationship conflict		11.93** (4.31)
R^2	.28	.49
ΔR^2	.08	.16**
Faultline strength	−6.84 (4.33)	−6.66 (4.06)
Task conflict	−0.27 (1.16)	0.32 (1.12)
Faultline strength × task conflict		9.77* (4.01)
R^2	.25	.44
ΔR^2	.06	.13*
Faultline strength	−6.37 (4.36)	−5.59 (4.08)
Process conflict	0.31 (1.14)	0.18 (1.06)
Faultline strength × process conflict		11.61* (4.58)
R^2	.25	.45
ΔR^2	.06	.14*

Note: $N = 40$. Values are unstandardized regression coefficients (standard error estimates listed in parentheses).
*$p < .05$; **$p < .01$.

observed the same pattern for task and process conflict. Namely, supporting H1b, the relationship between faultline strength and group performance was negative and significant when task conflict was low, $t(36) = -2.87$, $p < .01$, but not significant when task conflict was high, $t(36) = 0.37$, *ns* (see Figure 2). Supporting H1c, the relationship between faultline strength and group performance was negative and significant when process conflict was low, $t(36) = -2.88$, $p < .01$, but not significant when process conflict was high, $t(36) = 0.83$, *ns* (see Figure 3).

Study 1 Discussion

The results of Study 1 show that all three types of conflict (relationship, task, and process conflict) buffer the negative effect of demographic faultlines on group performance. We show this effect in real student teams that worked together over the course of one academic semester. A strength of Study 1 is that we show the buffering effect of conflict over a relatively long period of time.

To build on these findings and provide stronger evidence that intragroup conflict rather than an unmeasured variable related to intragroup conflict is shaping the relationship between demographic faultlines and group outcomes (Campbell & Stanley, 1966), in Study 2 we conducted a laboratory experiment where we manipulated the presence of intragroup conflict. We also manipulated faultlines by

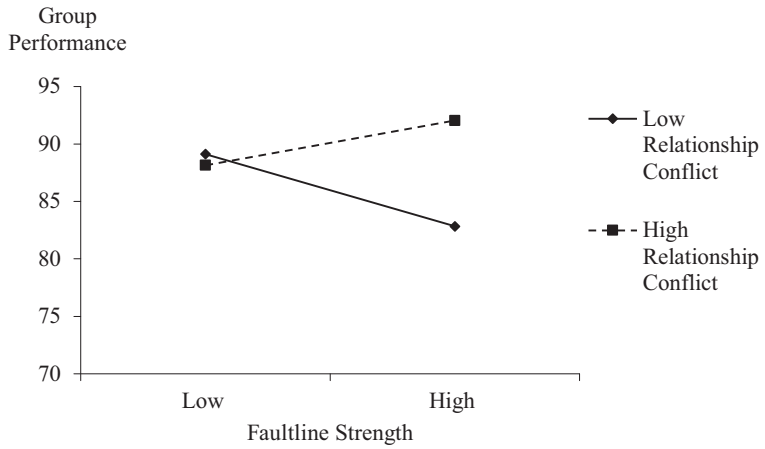

Figure 1. Relationship conflict × faultline strength interaction in predicting group performance (Study 1).

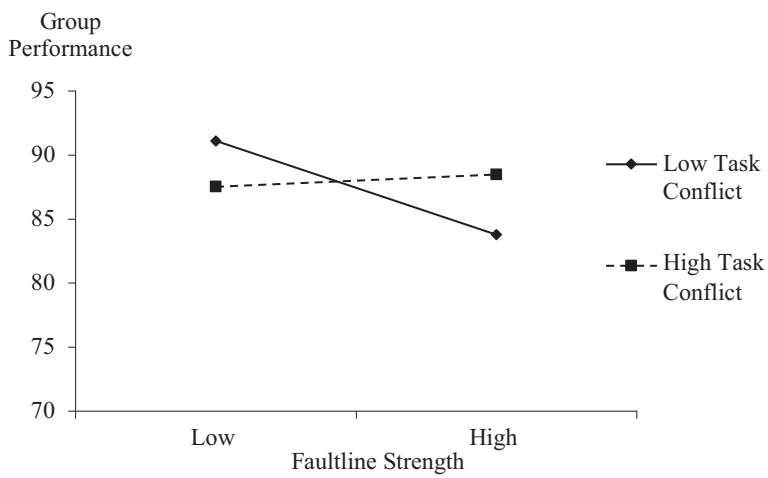

Figure 2. Task conflict × faultline strength interaction in predicting group performance (Study 1).

composing groups that contained ethnic faultlines or no faultlines. In contrast to faultline groups, groups with no faultlines should not suffer from subgroup-based communication deficiencies that can limit cognitive elaboration, coordination, and group performance. Thus, when groups do not have faultlines, we do not expect a beneficial effect of conflict. Instead, we expect the commonly reported direct negative effect of generalized conflict in teams (De Dreu & Weingart, 2003; de Wit et al., 2012). No-faultline groups may be more likely to perform at high levels prior to conflict, and once conflict erupts, they may experience decrements in performance. Thus, we expected that intragroup conflict (vs. no conflict) buffers the negative effect of faultlines (vs. no faultlines) on group performance such that group performance will be higher for faultline teams in the conflict condition compared to the no-conflict condition, but group performance will lower for no-faultline groups in the conflict condition compared to the no-conflict condition (*Hypothesis 2*).

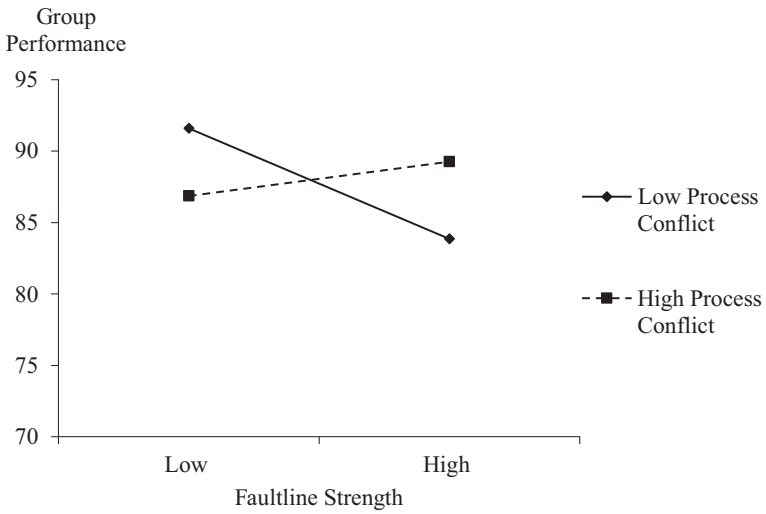

Figure 3. Process conflict × faultline strength interaction in predicting group performance (Study 1).

Study 2 Method

Participants and Design

Participants were 396 undergraduate students (49% men; 52.5% Caucasian, 47.5% East Asian) at a large Canadian university forming 99 four-person groups. After excluding participants who knew the purpose of our experiment (i.e., in the post-experiment probe, participants wrote that the purpose of the experiment is about race or conflict), or who suspected our group faultline or group conflict manipulation and groups that finished the task too quickly to suggest meaningful engagement (e.g., spending only 3 min on the group task), we had a total of 76 groups. Study 2 employed a quasi-experimental design. When participants signed up for the study, they were invited to the laboratory for the next available time slot using a batched approach to fill ethnic faultline (either all male or all female) or no-faultline (either all male or all female) groups. Once a group was filled, we randomly assigned the group to a conflict or no-conflict condition.

Procedure

Groups of four students were invited to the research laboratory. The groups were informed that the study was about how people work in groups, and they completed a decision-making task concerning desert survival developed by Johnson and Johnson (1982) and used in previous faultline research (Homan et al., 2007). The task required groups to generate a list of as many useful items as possible to survive in a desert and to generate arguments as to why the items are useful. Groups were instructed to read an information pamphlet from a desert national park for 5 min and then discuss what items would aid survival in the desert with the person sitting next to them at the table for 5 min. Following the procedures used by Homan et al. (2007), the information pamphlet included 12 essential and important factors that travelers need to think about when traveling to the desert, for example, temperature (e.g., high heat and daily temperatures) and rainfall (e.g., lack of rainfall and thus water). Participants were told that after their dyadic brainstorming session, the information pamphlet would be taken away, and they would need to discuss together with the other pair at their table all possible survival items that they generated. After

the experimenter took away the information pamphlets, groups were instructed to work together to generate agreement on a list of important survival items. After finishing this group task, students completed questionnaires as described below and were debriefed. The experiment lasted for 1 hr.

Faultline Manipulation

We manipulated faultlines by assigning participants to groups based on their pre-experiment demographic information obtained through department mass testing before they came to the research laboratory. In particular we composed two types of groups: ethnic faultline groups and no-faultline groups. Ethnic faultline groups consisted of two Caucasian Canadian students (i.e., students who identify themselves as Caucasians) and two East Asian students (i.e., students who identify themselves as East Asians), and they were either all male or all female groups. The reason for having same gender groups was to limit the emergence of other demographic faultlines. No-faultline groups consisted of either all men or all women and of either all Caucasian Canadians or all East Asians.

Conflict Manipulation

Upon arriving to the research laboratory, groups were randomly assigned to either a conflict or no-conflict condition. We developed a procedure to induce group conflict by manipulating the importance given to survival-related information presented in the task instructions (i.e., the information pamphlet). Participants sitting on one side of the table read that keeping hydrated was most important for survival and protection from heat was de-emphasized. For the other pair in the group, the opposite information was emphasized (i.e., protection from heat) and de-emphasized (i.e., keeping hydrated). We emphasized or de-emphasized what was most important for survival so that when group members came together to generate a list of survival items, they should experience disagreement and differences of opinion on what survival items are more important than others. We did not manipulate a specific type of intragroup conflict, but rather provided subgroups with different information about how to achieve their common goal of survival that could generate task, process, or relationship conflict to be measured post-task.

Measures

Faultline Perceptions

To assess whether participants perceived faultlines in ethnic faultline teams, we used three items from Jehn and Bezrukova (2010) (e.g., "My team broke into two groups during the desert survival task based on race"; $\alpha = .87$).

Intragroup Conflict

To ensure that our conflict manipulation was successful, we administrated the same scales for relationship, task, and process conflict as in Study 1 (αs were .68, .90, and .75, respectively).

Group Performance

To assess group performance on the desert survival task we coded the range of item categories and the degree of item functionality. Generating items that belong to more categories and have multiple functions indicate groups engaged in more divergent thinking, which is a common operationalization of group performance (Goncalo & Staw, 2006). Two coders blind to the study purpose and hypotheses went through each group's list of items individually. Coders sorted each item into one or more of the 12 categories of desert survival items (e.g., compass, knife, flashlight, matches; Johnson & Johnson, 1982). Coders then rated how many different categories were represented by a group's list of items on a 5-point scale ranging from 1 (*within one single category*) to 5 (*many different categories*). Groups whose items represented fewer categories generated items that were more similar to one another, indicating more

convergent thinking; groups whose items represented more categories generated items that were distinct from one another, indicating more divergent thinking (Amabile, Conti, Coon, Lazenby, & Herron, 1996).

For our second performance measure, coders examined the range of functionality in a group's list on a 5-point scale ranging from 1 (*the items are very similar in functionality*) to 5 (*the items are very different in functionality*). Groups that generated items representing a wider range of functionality engaged in more divergent thinking than groups who generated items representing a more narrow range of functionality.

The correlation between the two coders was high for both the category ($r = .38$, $p < .01$), and functionality ($r = .51$, $p < .01$) measures. The coders then discussed and resolved the inconsistencies in coding. Given the coded scores for category and functionality correlated highly ($r = .63$, $p < .01$), we averaged the scores to create a single composite score for group performance.[3]

Study 2 Results

Preliminary Analyses

The ICC(1) values were .19, .32, .08, and .21, respectively for relationship conflict, task conflict, process conflict, and faultline perceptions. The F statistics associated with ICC(1) were significant for relationship conflict, $F(74, 225) = 1.81$, $p < .01$; task conflict, $F(74, 225) = 2.70$, $p < .01$; process conflict, $F(74, 225) = 1.36$, $p < .05$; and faultline perceptions, $F(68, 207) = 1.89$, $p < .01$. The $rWG_{(j)}$ values were .93, .83, .91, and .69 respectively, for relationship, task, process conflict, and faultline perceptions. Thus, the results of ICCs and rWG values provide justification for aggregation of intragroup conflict and faultline perceptions to the group level.

Groups in the conflict condition rated perceived relationship conflict ($M = 1.66$, $SD = 0.43$) significantly higher than groups in the no-conflict condition ($M = 1.46$, $SD = 0.34$), $t(74) = 2.21$, $p < .05$ ($d = 0.52$). Groups in the conflict condition also rated perceived task conflict ($M = 2.55$, $SD = 0.77$) significantly higher than groups in the no-conflict condition ($M = 2.22$, $SD = 0.67$), $t(74) = 1.95$, $p < .05$ ($d = 0.46$). However, there were no significant differences in perceptions of process conflict between groups in the conflict condition ($M = 1.56$, $SD = 0.43$) and the no-conflict condition ($M = 1.46$, $SD = 0.31$), $t(74) = 1.23$, *ns* ($d = 0.09$). Thus, our results suggest that our conflict manipulation was successful in inducing two types of conflict, relationship and task conflict.

Hypothesis Testing

To test the hypothesis whether faultlines interact with conflict to predict group performance, we conducted a 2 (conflict vs. no-conflict) × 2 (faultline vs. no-faultline) analysis of variance (ANOVA). We found no significant interaction between conflict and faultlines, $F(1, 68) = 1.61$, $p = .21$ (partial $\eta^2 = .02$), indicating Hypothesis 2 was not supported.

Supplementary Analyses

One possible reason the interaction was not significant is that our no-faultline condition included both East Asian and Caucasian Canadian ethnically homogeneous groups. Liang, Adair, and Hideg (2014) recently argued that the temporal experience and consequences of intragroup conflict vary depending on a group's cultural identity. They found that relationship conflict undermined team identity in North

[3]The performance for four groups was not coded because those groups only listed a single item, making comparison of items not meaningful.

American teams but not in East Asian teams. Because this prior research suggests that East Asian teams may not incur negative consequences of intragroup conflict, we explored our data further by recoding our no-faultline teams to further distinguish ethnically homogeneous Caucasian Canadian teams (n = 24) and ethnically homogeneous East Asian teams (n = 19). We subsequently ran a 2 (conflict vs. no-conflict) × 3 (faultline vs. no-faultline North American vs. no-faultline East Asian) factorial ANOVA.

Results revealed that there was a significant interaction between conflict and faultlines, $F(2, 66) = 6.04$, $p < .01$ (partial $\eta^2 = .16$) (see Figure 4). Pairwise comparisons indicated that under the no-conflict condition, there was no significant difference in group performance between the no-faultline East Asian and faultline teams (mean difference = −0.03, SE = 0.26, p = .91), but group performance was significantly different between the no-faultline Caucasian Canadian and faultline teams (mean difference = 0.58, SE = 0.24, $p < .05$). Under the conflict condition, there was no significant difference in group performance between the no-faultline East Asian and faultline teams (mean difference = 0.30, SE = 0.24, p = .22), and between the no-faultline Caucasian Canadian and faultline teams (mean difference = −0.33, SE = 0.23, p = .15). Thus, partially in line with Study 1 results, we found a buffering effect of group conflict on the negative group faultline–group performance relationship, but only when comparing faultline teams and no-faultline North American teams, not when comparing faultline with no-faultline East Asian teams. In line with Liang et al. (2014), our results suggest that group conflict is only detrimental to group performance in North American teams, but not East Asian teams.

General Discussion

The present research demonstrates that intrateam conflict can help bridge demographic faultlines in small work groups. We proposed that because conflict involves noticing differences and disagreement, it may attenuate the negative effect of demographic faultlines on group performance. While social categorization processes in faultline groups lead to subgroups characterized by competition and limited communication, conflict can generate cross-subgroup communication and information elaboration that diminishes the negative categorization effects. Across two studies we show that demographic faultlines had a less negative effect on group performance for student teams that reported greater team conflict

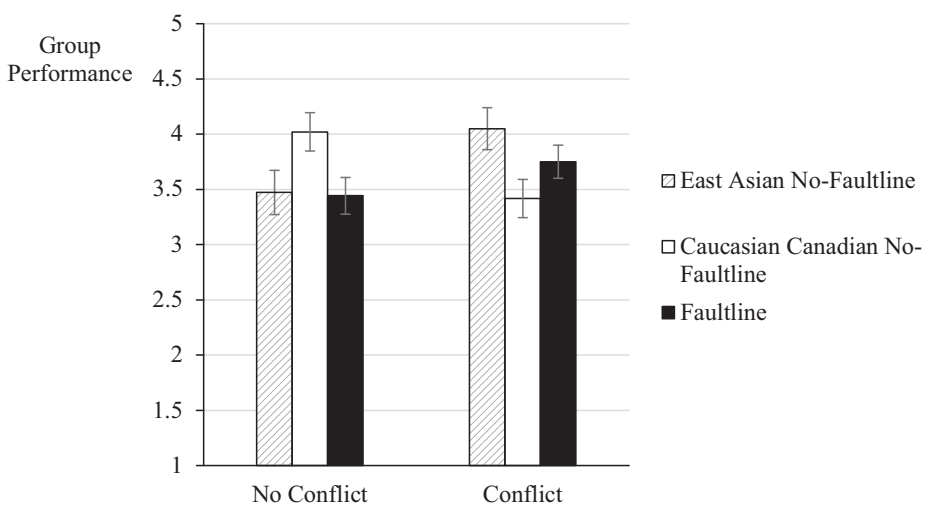

Figure 4. Conflict × faultline interaction in predicting group performance (Study 2).

earlier in the term (Study 1) and under conditions of conflict, ethnic faultline groups performed better than Caucasian Canadian no-faultline groups in a laboratory study (Study 2). Together our findings support predictions based in CEM theory and constructive controversy and contribute to our understanding of faultline-bridging moderators.

Theoretical Contributions

Our results extend existing theory on group faultlines by identifying a previously unexplored moderator that attenuates negative effects on group performance. Supporting initial theorizing about group faultlines (Lau & Murnighan, 1998), previous research has reported conflict as a negative consequence of subgrouping. But the relationships between faultlines, conflict, and group performance have remained murky. Some research reports faultlines are related to higher group conflict (e.g., Li & Hambrick, 2005; Polzer et al., 2006) and other studies find that faultlines are related to lower group conflict (e.g., Lau & Murnighan, 2005). By examining conflict as a moderator, rather than a consequence, of faultlines, we offer novel insights on conflict as a critical process and communication variable in small work groups.

Bezrukova et al. (2016) recently proposed conflict as a moderator of the faultline–performance outcome and found evidence supporting their social identity arguments in a multilevel study of major league baseball teams. We argue and find evidence that conflict can moderate the faultline–performance relationship, offering opposite predictions, based on the CEM. According to social identity processes, Bezrukova et al. argued and found that internally directed team conflict reinforced subgrouping and negative effects on performance, whereas externally directed team conflict reinforced a team's superordinate identity, diminishing the negative effects of faultlines on performance. But according to CEM, cognitive elaboration can break down negative categorization effects in diverse groups (Van Knippenberg et al., 2004). Our results support CEM, minority influence, and constructive controversy accounts that suggest conflict can generate cross-subgroup communication and elaboration (Bezrukova et al., 2009; Tjosvold et al., 2014), thus diminishing the negative effects of faultlines on group outcomes. In addition to different methodologies and measures noted above, another reason our results may differ is the type of team and task (large sports team vs small group knowledge work). Given that conflict is a form of communication and that at the core of faultline theory is a lack of cross-subgroup communication, our study calls for refinements and future developments of faultline theory and the role of intervening variables.

Consistent with recent empirical evidence and theorizing (Bradley et al., 2015; Bendersky et al., 2014), our research indicates that some forms of group conflict may be beneficial, in this case facilitating performance in demographic faultline groups. The idea that group conflict may lead to more optimal solutions is not new (e.g., Kuhn & Poole, 2000), as the conflict management literature suggests that certain types of conflict management styles may involve more open discussions among group members, leading to better solutions (Deutsch, 2006; Poole & Roth, 1989; Tjosvold, 1998). In groups with demographic-based subgroups, conflict presents an opportunity for subgroups to engage. Simply figuring out that conflict exists between subgroups necessitates communication and information exchange, an opportunity that subgroups otherwise may not have. When groups have a shared goal, conflict can make the superordinate group identity salient, which may lead to constructive conflict across subgroups (Somech, Desivilya, & Lidogoster, 2009).

Our research highlights a key distinction between conflict in faultline and no-faultline groups. Because groups without faultlines do not face demographic-based divisive tendencies that restrict collaboration and cooperation, conflict does not present a unique opportunity for group engagement. Hence, consistent with prior research conducted mostly in Western cultures, we found that conflict in no-faultline Caucasian Canadian groups had a negative effect on group performance. Also consistent with recent research, we found that in no-faultline East Asian groups conflict boosted group performance. Liang and colleagues argued that conflict may be less detrimental in East Asian teams than Western teams because

the presence of strong group norms provides a safe environment to engage in constructive, nonthreatening conflict (Liang et al., 2014). Our results corroborate this account.

Limitations

Although we replicated our findings across two studies with different samples, tasks, measures, and research design, there are several limitations that caution generalizability and offer directions for future research. We did not measure cross-subgroup communication or interaction, which is the theoretical mechanism we proposed. Our results allow us to conclude that conflict moderates and attenuates the negative faultline–group performance link, but we cannot be sure of the mechanism. Because our theoretical development drew on CEM, constructive controversy, and communication perspectives, there are several possible communication and engagement mechanisms that future research can examine, as noted below.

In Study 1, we did not measure conflict during the writing task that was used to measure group performance. Although this can be seen as a limitation because there may be other intervening processes that contributed to performance effects, it can also be seen as a strength, offering a conservative test of the link between our constructs. As noted above, the timing of conflict, particularly in relation to the strength of group norms and identity, may be important to understanding its role in faultline teams.

Our participants were teams of undergraduate university students. We found consistent results across student teams that worked together for a semester and student teams that came together for a brief laboratory session. Replication with a field study in an organizational setting will boost generalizability. We examined only demographic-based faultlines, so we are unable to generalize to other faultline attributes, such as language based faultlines (Kulkarni, 2015), cultural value faultlines (Brett, 2007), goal faultlines (Ellis, Mai, & Christian, 2013), or informational faultlines, which may have a positive effect on group performance (Bezrukova et al., 2009, Cooper et al., 2013).

Future Directions

As work groups are increasingly diverse, being able to reap the benefits of diversity while reducing its negative effects may be of paramount importance for organizational survival (Joshi & Roh, 2009). Our results suggest that bridging subgroups may occur not only as a function of emphasizing shared goals and superordinate team identification, but also as a function of communication and constructive conflict. As information exchange and elaboration may release unique ideas and synergies in diverse groups, nurturing constructive conflict in existing subgroups may be a more productive approach than efforts to eliminate subgroups. Research on how and when to engage in conflict communication suggests that group norms and safety are essential (Brett, Behfar, & Kern, 2006; Lovelace, Shapiro, & Weingart, 2001; Von Glinow, Shapiro, & Brett, 2004).

In Study 1 all three types of group conflict had buffering properties on the negative effect of faultlines. While the argument that task and process conflict may boost performance is relatively straightforward, the case of relationship conflict is more curious. We expected that relationship conflict would buffer the negative effects of faultlines because even personal dislikes and disagreement about non-task-relevant subjects may serve to open a line of communication, potentially leading to the discovery of processes or solutions that would otherwise have remained elusive. Future research should further investigate distinct types of conflict and communication, including destructive versus constructive conflict (Tjosvold et al., 2014), social versus task engagement (Ireland & Henderson, 2014), communication sequences (Adair & Loewenstein, 2013), and linguistic or nonverbal synchrony (Donohue & Liang, 2011). Finally, existing moderators from the faultline literature, such as relational closeness or subgroup strength (Rispens, Greer, Jehn, & Thatcher, 2011) should be examined for multiple interactive effects that were not measured in this research.

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