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The dynamic relationship between performance feedback, trust, and conflict in groups: A longitudinal study

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Abstract

Moderate task conflict has generally been associated with higher group performance, and relationship conflict associated with lower performance. Past studies have most often discussed their findings as though differences in level of intragroup conflict cause differences in group performance—rather than testing the additional possibility that reported group conflict is a reaction to feedback on past group performance. This paper explores the dynamic relationships between intragroup conflict and performance with a longitudinal design. Results from 67 groups suggest that initial performance feedback to groups can have significant consequences for future team interaction. We find evidence to suggest that, (a) negative initial group performance feedback results in later increases in both task and relationship conflict, but that (b) groups with high early intragroup trust are buffered from experiencing the worst of future relationship conflict.

Keywords: Groups; Performance feedback; Task conflict; Relationship conflict

Introduction

A strong and growing body of research links task and relationship conflict with performance in ongoing work teams (e.g., de Dreu, 1997; Jehn, 1995, 1997; Pelled, Eisenhardt, & Xin, 1999; Simons & Peterson, 2000). Moderate task conflict, the perception of disagreements among group members about the content of their decisions, is often linked with positive performance. On the other hand, relationship conflict or the perception of interpersonal incompatibility is exclusively linked to negative group performance. Remarkably few studies have seriously investigated, however, the possibility that intragroup conflict can be a consequence of past performance. Most studies acknowledge this dynamic relationship, but do not empirically test, the additional notion that performance feedback may actually be a cause of subsequent conflict. Any evidence that suggests this reverse ordering could have important implications for both managerial practice and for theoretical accounts of the relationship between group process and performance—especially over time. In this paper we investigate this additional possible causal linkage suggesting that past group performance feedback is a significant predictor of future intragroup conflict.

The most researched argument suggesting that group conflict predicts performance

The discussion about the relationship between group conflict and performance has taken shape over 50 years dating back to Guetzkow and Gyr (1954). In it, the experience of task conflict is hypothesized to have group performance implications. Specifically, existing literature suggests that groups that experience moderate task conflict tend to make better decisions than those that do not for two reasons. The first theoretical argument suggests that task conflict encourages greater cognitive understanding of the issue being discussed. The second theoretical argument suggests that the link between task conflict and group performance comes from the positive relationship between task conflict and the likelihood that group members will have the opportunity to voice their own perspective on issues being decided by the group (Amason, 1996; see also Folger, 1977). Voice, in

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turn, has long been associated with greater affective acceptance of group decisions (see Greenberg & Folger, 1983; Lind & Tyler, 1988, for reviews) and even improved group decision quality/performance (Peterson, 1997). This effect has been found at both the individual level (Baron, 1991; Putnam, 1994) and the group level (Fiol, 1994; Janssen, Van De Vliert, & Veenstra, 1999; Schweiger, Sandbert, & Rechner, 1989).

Relationship conflict is the perception of personal animosities and incompatibility. Research on relationship conflict has a long history in the literature dating from the earliest studies of conflict (e.g., Deutsch, 1969; Evan, 1965; Guetzkow & Gyr, 1954) to a number of more recent studies (e.g., Gladstein, 1984; Janssen et al., 1999; Jehn, 1995; Wall & Nolan, 1986). These studies document the negative association between relationship conflict, intragroup trust, and performance. Relationship conflict negatively affects group performance in three interrelated ways. First, relationship conflict limits the information processing ability of the group because group members spend their time and energy focusing on each other rather than on the group problems (Evan, 1965; Jehn & Mannix, 2001). Second, relationship conflict limits group members' cognitive functioning by increasing their stress and anxiety levels (Jehn & Mannix, 2001; Staw, Sandelands, & Dutton, 1981). Third, relationship conflict encourages antagonistic or accusatory attributions for other group members' behavior, which can create a self-fulfilling prophecy of mutual hostility and conflict escalation (Baron, 1991; Janssen et al., 1999; Torrance, 1957; Walton, 1969). In sum, substantial literature has suggested that relationship conflict is detrimental to group performance.

The dominant theme in the extant literature is the view that task and relationship conflict each have independent causal effects on group performance. It is also reasonable, however, to explore the idea that the association could be reciprocal and/or dynamic. In other words, the reverse proposition that group performance has an impact on levels of future conflict in the group may also be true. For example, once a group gets feedback about its performance, it may need to adjust its process in order to address the feedback and reach its final goal. During this process, a group must come to terms with mistakes, revisit old sources of tension, and renegotiate how to coordinate the group's new effort. This opens the door to both the revisiting of old conflicts, as well as facing new ones. Previous conflict experiences are likely to shape how members react when faced with new challenges—which raises the question: do they begin from a foundation of trust or suspicion? That is, the foundation laid by previous experience could either serve to steady a group in the face of negative feedback, or set the group at odds by inflaming old suspicions (cf., Simons & Peterson, 2000). This additional possibility of reverse causality (i.e., performance feedback causing future group process) has received scant empirical or theoretical attention in the groups literature. Most scholars acknowledge the possibility of reverse or reciprocal causality, but discuss the results from cross-sectional studies as though process causes outcomes (see Daily & Johnson, 1997; Peterson, Owens, & Martorana, 1999, for notable exceptions). This paper seeks to add to our understanding of the relationship between group performance, trust, and conflict. We specifically focus our attention here on exploring the relatively understudied topic of how initial group process and performance feedback affect later group processes and performance. Therefore, our driving research question is: To what extent does initial performance feedback have an impact on subsequent reported group process and performance?

The argument for how group performance feedback could cause future conflict

For a variety of reasons, most scholars talk about their findings as though intragroup process causes performance, rather than how performance might cause subsequent group process (see March & Sutton, 1997, for a discussion of this). We propose to expand the existing research frame here by investigating the possibility of an outcome–process linkage. Indeed, there is a small literature, consisting of two parallel streams of research, that specifically suggests that outcome–process linkages (rather than process–outcome linkages) may exist and have a causal effect on future group process.

The first piece of the research stream is the literature on implicit theories of successful group decision-making. Staw (1975) documented that when students believed that a group had been successful, they retrospectively attributed greater task conflict as well as cohesiveness (i.e., less relationship conflict), quality of communications, openness to new ideas, motivation levels, ability, role clarity, and satisfaction with the team than if they were led to believe the team had been unsuccessful. Guzzo, Wagner, MacGuire, Herr, and Hawley (1986) also confirmed that implicit theories of process–outcome relationships operate, but found that they are particularly sensitive to negative rather than positive outcome information. These studies demonstrate that people's cognitive recall of group process information is affected by outcome knowledge. The evidence for whether experienced outcomes (vs. exposure only to manipulated feedback) actually causes differences in group process in these studies is indirect, however, because they did not follow feedback with observation (i.e., measurement of conflict) in a longitudinal design as we do in this study.

A second, and more direct, research stream exists in the literature on the effects of individual feedback on performance. Existing literature on feedback suggests

that providing direct performance feedback to individuals results in subsequent performance changes consistent with the implicit theories described above (see Kluger & DeNisi, 1996, for a review). Lindsley, Brass, and Thomas (1995) take this process–output link one-step further by arguing that the theoretical mechanism of Bandura's (1982) self-efficacy hypothesis also operates at the group and organizational levels. They construct a case for performance–efficacy spirals—performance should affect self-efficacy, which in turn affects performance, which in turn affects self-efficacy, and so on. The reciprocal causation hypothesized in their model causes organizational outcomes to spiral upwards or downwards. They do note, however, that high interdependence among the variables in ongoing groups makes trying to identify original causality futile with a cross-sectional design. For this reason, we specifically wanted to look at newly formed groups longitudinally to try to understand how feedback loops between group process and performance might emerge.

In trying to understand the effects of initial performance feedback on subsequent group processes and performance, we suggest that there are two distinct issues to consider. The most important issue is to understand how groups deal with performance feedback information. We argue here that this process is likely to parallel what we know about the threat-rigidity effect (Staw et al., 1981). Negative performance feedback can be considered a "threat" to groups because it indicates impending cost (Staw et al., 1981)—in the form of performance rewards, social recognition, decreasing resources, etc. Staw et al. (1981) suggest that after a group receives a threat, the typical response is reduced flexibility, increased control imposed on deviant members, and restriction of information flow. This tendency to invoke a rigid response rather than a thoughtful or novel response may not allow the group to successfully address the new conditions in which they find themselves operating—or to respond effectively to adequately address negative performance feedback. Some examples of responses to external threats at the intergroup level of analysis are decreased feelings of intragroup cohesion (Staw et al., 1981), blaming others for failures (Worchel, Andreoli, & Folger, 1977), or assigning responsibility to other members for encouraging the group to take a direction other members did not agree with at the time. These reactions may also occur at the intragroup level and make members less willing to entertain each other's alternative suggestions or viewpoints (i.e., task conflict), feel increased interpersonal tension (i.e., relationship conflict), and potentially begin a negative performance–process spiral.

Groups do not begin, of course, with performance feedback. Group members will have worked together for some time before they receive initial feedback. So the link from performance directly to future process may also depend on the foundation laid in the group from initial process interactions as well—the performance feedback simply lays bare any lingering questions group members may have about its initial group process. The most direct evidence for this comes from Simons and Peterson (2000) who found evidence to suggest that groups with high levels of trust are better able to avoid legitimate task conflict escalating into destructive relationship conflict. Similarly at the intergroup level, Worchel et al. (1977) provide evidence for the impact of previous process experiences on future interactions by finding that the success of intergroup collaborations depends on both previous interaction and performance feedback that groups co-experienced. In general, the impact of initial negative performance feedback was to decrease the ability of groups to cooperate with each other on future projects if they did not already have a previously shared success. Even more important for our argument here was their finding about the effects of performance feedback with groups that have a history together. They found that groups that had been, (a) cooperative in the past and then experience negative performance feedback persisted in collaborating with each other, and (b) competitive in the past and then experience negative performance feedback decrease even more in intergroup attraction.

Predicting relationship conflict

We wanted to pursue these intriguing findings suggesting how initial group process and performance feedback might both affect future group processes. In doing so, we identified three interrelated hypotheses about how initial performance feedback and pre-feedback group processes predict future group processes. Our first argument suggests that negative performance feedback may directly create negative group member interpersonal relations (i.e., relationship conflict). The negative impact of relationship conflict stems from animosity, anxiety, antagonistic attributions, and hostility created by receiving negative feedback (cf., Baron, 1991; Evan, 1965; Janssen et al., 1999; Jehn & Mannix, 2001; Staw et al., 1981; Torrance, 1957; Walton, 1969). More specifically, the condition of external threat or stress increases member anxiety (Staw et al., 1981). This stress or anxiety increases member salience of other member's deficiencies (Staw et al., 1981) and reduces favorable evaluations of previous intragroup relationships (Zander, 1979). Because group work involves the interdependent work of individuals, it is highly likely that other's efforts will have salience in the judgment of the group outcome (Kluger & DeNisi, 1996), therefore encouraging antagonistic or accusatory attributions for other group members' behavior (Baron, 1991; Janssen et al., 1999; Torrance, 1957; Walton, 1969). In other words, any hint of relationship conflict experienced prior to receiving negative feedback will encourage

much more animosity and anxiety in the face of a new "threat." This argument suggests the following hypothesis:

Hypothesis 1a. The more negative the initial group performance feedback, the greater the increase in relationship conflict in subsequent group process.

A further supporting argument builds on Staw's (1975) original observation about retrospective evaluations of group process. Group members may not feel any relationship conflict prior to receiving negative feedback, but then reinterpret their group process in light of the negative feedback. In other words, this suggests that the often-replicated correlation between relationship conflict and group performance may emerge only *after* feedback is received. This suggests the following hypothesis:

Hypothesis 1b. Relationship conflict reported prior to initial performance feedback should be unrelated to actual group performance.

Predicting task conflict

Our second argument suggesting mechanisms for how initial performance feedback affects future group processes suggests that negative group performance feedback may have an impact on how well a group is able to constructively debate opinions and ideas (i.e., task conflict). As discussed earlier, moderate levels of task conflict are often associated with positive performance (Jehn, 1997; Wall & Callister, 1995). On the one hand, a number of scholars have noted that extremely high levels of task conflict can be detrimental to member satisfaction and group performance because it distracts the group's attention away from reaching consensus or task accomplishment (e.g., Amason & Sapienza, 1997; Jehn, 1997; Jehn & Mannix, 2001; Porter & Lilly, 1996). On the other hand, too little task conflict can lead to frustration due to a perceived lack of reciprocal commitment or disbelief that other members are contributing (Jehn, 1997). In both of these extreme situations, members are likely to have mixed reactions to their experience. In groups that experience extremely high task conflict, for example, members may simultaneously feel both frustration at the way the group engaged in task debate as well as a sense that critical issues were thoroughly debated. Thus, performance feedback may well be important for deciding which of these reactions is more important—if feedback is positive then group members will accept that their process was successful and not search for greater explanation; if the feedback is negative then this will encourage discussion to understand why it happened and what can be done to improve in the future. Thus, we suggest the following hypothesis:

Hypothesis 2. The more negative the initial group performance feedback, the greater the increase in subsequent task conflict.

Intragroup trust moderates the impact of increased task conflict

If our Hypothesis 2 predicting increased task conflict is true, then groups that receive negative performance feedback are at significant risk of having their search for understanding (i.e., task conflict) devolve into recrimination and blaming (i.e., relationship conflict), especially if they have not already established a degree of intragroup trust before receiving the feedback. Simons and Peterson (2000) have recently suggested that increased task conflict in an environment of low trust can spark increased relationship conflict. Their argument for this is the notion that group members constantly interpret the behavior of other group members—they infer intentions, appraise whether the source of the behavior they see is internal or external, and assess the completeness and accuracy of the arguments made by others. When this attribution process suggests the possibility of personal attack during the exchange of ideas and opinions (Jehn, 1997; Torrance, 1957) or hidden agendas (Amason, 1996; Amason & Sapienza, 1997; Eisenhardt & Bourgeois, 1988), task conflict triggers relationship conflict through a process of biased information processing and self-fulfilling prophecy (see Fiske & Taylor, 1991, for a review of this process). Ambiguous behavior is thereafter interpreted as fitting the expectations one has about the group or individual involved, and this confirmed expectation can create a self-fulfilling prophecy. When one person distrusts another, that person is more likely to interpret ambiguous conflict behaviors as intentionally harmful and convey distrust through his or her conduct. The person whose behavior is interpreted as sinister, perceiving that he or she is distrusted, tends to reciprocate that distrust (Creed & Miles, 1996; Zand, 1972). Simons and Peterson (2000) previously demonstrated that trust moderates the relationship between relationship conflict and task conflict in top management teams. Here we suggest that this effect should replicate under conditions of receiving unambiguous feedback (i.e., unlike top management teams where feedback is typically mixed or muted).

Hypothesis 3. Intragroup trust will moderate the relationship between task conflict and later relationship conflict such that task and relationship conflict will be significantly less related when trust is high.

The current study

The purpose of this research is generally to add to our understanding of how performance feedback, trust, and conflict are related. More specifically, we look at how

performance feedback affects future intragroup conflict and group performance. Our research specifically tests three possible psychological mechanisms that underlie the dynamic relationship between performance feedback and later group process (i.e., task and relationship conflict). This study employs time-lagged data to test the hypotheses that, (a) negative initial performance feedback causes future relationship conflict (Hypothesis 1a); (b) initial relationship conflict and group performance will *not* be related (Hypothesis 1b); (c) negative initial performance feedback causes future task conflict (Hypothesis 2); and (d) intragroup trust established before negative feedback minimizes the chances of increased task conflict transforming into later reported relationship conflict (Hypothesis 3).

Method

Sample

We selected an MBA sample in the first term of their first year so that we could get at *initial* group processes and performance free from any effects of past performance history or individual reputations. We surveyed all 252 students in 67 teams in the first year of an MBA class twice during that initial term. The teams consisted of four members each and worked together closely across the entire core course curriculum. Their course-required tasks consisted of analyzing and writing case studies and completing problem sets. The demographics of the class were: average age of 29, 27% female, 5% underrepresented minority, and 34% born outside of the USA. Team membership was assigned to have at least one non-US born member, but was otherwise randomly assigned.

At the time one measurement, 244 responses (8 non-responses) were collected for a response rate of 96.8%; the time two measure included 225 responses (27 non-responses) for a response rate of 89.3%. Across the two time periods, all of teams produced matched sets of surveys from at least three of the four members.

Procedure

Two surveys were given to the entire class at two different points in time by the authors of this paper, who were not teaching the students at the time. The time-one survey was given to each team member and returned after the first major team assignment was submitted to the instructors, but before the grade on the assignment was known (week three of the term). That survey included 42 total items, of which 12 are reported here (i.e., task conflict, relationship conflict, and intragroup trust scales). The time-two survey was given to each team member after the first major assignment grade was known, and after the last major team assignment was turned into instructors, but before that final project grade was known (week seven). The time-two survey included the same eight items that compose the task and relationship conflict scales in the first survey.

Measures

Time 1 and time 2 surveys both included identical measures of task conflict and relationship conflict using Jehn's (1995) four-item Likert-type scales. The items were slightly altered to ask about conflict in "your team" rather than "work unit." Respondents rated the four questions from 1 = none or never to 9 = always. Coefficient αs for these scales were .91 and .87 for task conflict at times one and two respectively and .97 and .96 for relationship conflict at time one and two respectively. Intragroup trust was measured only at time 1 with four items used by Simons and Peterson (2000). Coefficient α for the scale was .89.

Group performance was assessed by the instructors for the course (who were not associated with the data collection) and consisted of team grades received by each group for their two major group projects. Both assignments were case-related projects given numerical grades up to 100 points. The scores at time one ranged between 70 and 95% with a mean of 80% and a median of 80% for both professors. The scores at time two ranged between 70 and 95% with a mean of 84% and a median of 85%. Grades were assigned based on thoroughness of case analysis, use of logic, and appropriate application of class theory. These two course grades made up 40% of individual course grades (class-participation and a final exam accounting for the remaining 60%).

All scale items reported in this study are included in Table 1.

Analysis

All reports of data are aggregated to the group level by taking the mean of the group members. To assess the discriminant validity of the measured constructs, we applied a principle axis factor analysis with oblique rotation. Hypotheses 1a, 1b, and 2 were tested with linear regression, and Hypothesis 3 was tested using stepwise linear regression.

Results

We first measured the aggregation statistics for all the scales reported here. All were above the minimum criterion of .20 (Georgopolous, 1996, p. 40); with an average Rwg on each scale that was above .85 (James,

Table 1
Principle axis factor analysis with oblique rotation of scale items for conflict, intragroup trust, and satisfaction

Item	Relationship conflict	Task conflict	Trust
How much personal friction was there among members of your team?	*.89*	−.57	−.45
How much were personality clashes evident in your team?	*.86*	−.57	−.49
How much tension was there among members of your team?	*.92*	−.60	−.48
How much emotional conflict was there among members of your team?	*.85*	−.53	−.43
How often did people in your team disagree about opinions regarding the work being done?	.54	*−.83*	−.35
How frequently were there conflicts about ideas in your team?	.50	*−.82*	−.28
How much conflict was there about the work you did in your team?	.55	*−.66*	−.40
To what extent were there differences of opinion in your team?	.46	*−.77*	−.25
To what extent did you expect complete truth from each other?	−.26	.17	*.58*
To what extent were you all certain you could trust each other?	−.56	.40	*.90*
To what extent did everyone show absolute integrity?	−.56	.39	*.82*
To what extent did you counts on each other to fully live up to their word?	−.30	.27	*.66*

Demaree, & Wolf, 1984). We then conducted a factor analysis using principle axis extraction (setting Eigenvalues >1) with oblique rotation to assess whether respondents were able to differentiate on the survey between relationship conflict, task conflict, and trust. This analysis, shown in Table 1, found that items loaded on their appropriate factors generally without strong cross-loading. Table 2 shows the intercorrelations among all variables in this study, including replications of past studies (e.g., task and relationship conflict are significantly correlated $r = .75$ at time 1 and $r = .73$ at time 2).

Hypothesis 1: Poor initial group performance feedback will predict later increased relationship conflict

Results of regression analysis reveal support for Hypothesis 1a: $R^2 = .43$, $F(3, 63) = 24.0$, $p < .05$. We ran time 2 relationship conflict as the dependent measure, using grade at time one as a predictor and controlling for both task and relationship conflict at time 1. Both time 1 grade ($B = -.33, p < .05$) and relationship conflict at time 1 ($B = .58$, $p < .05$) were significant predictors of relationship conflict at time two. Time 1 task conflict was not significant. The β coefficient of time1 grade was negative, indicating that lower grades significantly predicted higher levels of relationship conflict at time 2. The β coefficient for relationship conflict at time 1 was positive indicating that higher relationship conflict at time 1 predicted higher relationship conflict at time 2, even when controlling for task conflict and grade at time 1. There was also a significant difference between the relationship conflict means at time 1 and time 2, computed with a paired sample t test: $t\ (66) = 4.9, p < .05$.

These results are consistent with our argument that a poor first grade can trigger later relationship conflict (even controlling for both types of conflict at time 1). This is supported by results from Hypothesis 1b which confirm that neither task ($r = .03$, *ns*) nor relationship ($r = .03$, *ns*) conflict at time 1 predict group performance prior to feedback ($F(2, 64) = .03$, *ns*). However, the acceptance of a null hypothesis requires further justification. Greenwald (1975) recommends testing a null range—rather than a null point to demonstrate why a .05 significance test warrants acceptance of the null hypothesis. That is, the researcher must first determine what is a meaningful and nontrivial difference in the dependent variable. In this case, we determined that a ±5 point difference in grade between groups was meaningful. This is the equivalent of a half-letter grade

Table 2
Descriptive statistics and bivariate correlations ($N = 67$)

Variable	*M*	*SD*	1	2	3	4	5	6	7	8
1. Relationship conflict—time 1	2.9	1.5	—							
2. Relationship conflict—time 2	3.6	1.4	.56**	—						
3. Task conflict—time 1	4.5	1.2	.75**	.42**	—					
4. Task conflict—time 2	4.9	1.0	.45**	.73**	.58**	—				
5. Intragroup trust—time 1	7.8	.78	−.70**	−.42**	−.57**	−.39**	—			
6. Grades—time 1	80.0	7.0	.03	−.32**	.03	−.20	−.20	—		
7. Grades—time 2	83.7	7.4	.15	.04	.03	−.12	−.10	.13	—	
8. Grade change	3.7	1.1	−.12	−.30**	−.03	−.24*	−.07	.73**	.49**	—

* $p < .10$.
** $p < .05$.

(e.g., a *B* vs. a *B*+). Second, the researcher must determine whether a 95% confidence interval encompasses the null range based on the percentage of the standard deviation that this null range represents. In this case we centered the time-one grade scores ($m = 0$, $SD = 7.0$) by subtracting the sample mean from each team's score. A 5 point difference among groups accounted for 50% of groups within one standard deviation, and 64% of the groups fell within two standard deviations of the mean (five additional teams were within three standard deviations). Therefore, it is appropriate that the 95% confidence interval (instead of a wider confidence interval) test in linear regression captures the odds in favor of accepting the null hypothesis (Greenwald, 1975).

In addition to the confidence interval, Cortina and Folger (1998) also recommend a triangulation approach whereby the variable in question should be expected to significantly associate with other variables in predictable ways. In this case, we note a recent meta-analysis of relationship conflict studies (de Dreu & Weingart, in press) that suggests a significant mean corrected correlation between task and relationship conflict of .54 (here it is .75, $p < .05$) and with satisfaction/trust they found a significant mean corrected correlation of −.56 (here it is −.70, $p < .05$). Also, in the most directly comparable situation of these groups once they were ongoing, the mean corrected correlation between relationship conflict and performance was also significant at −.25 (here it was −.32 with the immediate time adjacent data with time 1, and −.30 with grade change between time 1 and time 2, both of which are significant at the .05 level). In short, the relationship conflict variable associates with the other variables in the study as one would predict from the meta-analysis, thus we accept Hypothesis 1b. Taken together, the confirmation of both Hypotheses 1a and 1b suggest that relationship conflict at time 2 has two distinct predictors—relationship conflict at time 1 and low grades at time 1.

Hypothesis 2: Poor initial group performance feedback will predict later increased task conflict

Results of regression analysis reveal support for Hypothesis 2: $R^2 = .25$, $F(3, 63) = 12.9$, $p < .05$. We ran time 2 task conflict as the dependent measure, using grade at time one as a predictor and controlling for both task and relationship conflict at time 1. Both time 1 grade ($B = -.12$, $p < .05$) and task conflict at time 1 ($B = .56$, $p < .05$) were significant predictors of task conflict at time two. Time 1 relationship conflict was not. The β coefficient of time 1 grade was negative, indicating that lower grades significantly predicted higher levels of task conflict at time 2. The β coefficient for relationship conflict at time 1 was positive indicating that higher task conflict at time 1 predicted higher task conflict at time 2, even when controlling for relationship conflict and grade at time 1.

Table 3
Results of moderated regression analysis predicting relationship conflict

Variable	Hypothesis 3	
	Main effects model	Moderated model
Task conflict	.33**	2.9**
Intragroup trust	−.50**	1.4
Task conflict × trust		−.33**
Change R^2		.06**
Model R^2	.22**	.28**

** $p < .05$.

Hypothesis 3: Established intragroup trust will moderate the effect of increased task conflict that results from receiving negative performance feedback

Results of the moderated regression analyses of data of task conflict and trust from the time 1 survey and relationship conflict from the time 2 survey, shown in Table 3, reveal support for Hypothesis 3 (The strict replication of Simons & Peterson, 2000 all measured at time 1 before performance feedback is given, is also significant). In the main effects model, task conflict positively predicts relationship conflict while trust negatively predicts relationship conflict. Thus, the impact of these two variables is additive and not substitutable. These two variables combined account for 53% of the variance in relationship conflict at time 2. The addition of the interaction term between task conflict and trust accounts for an additional 6%. The *B* coefficient for this interaction term is significant and negative, which

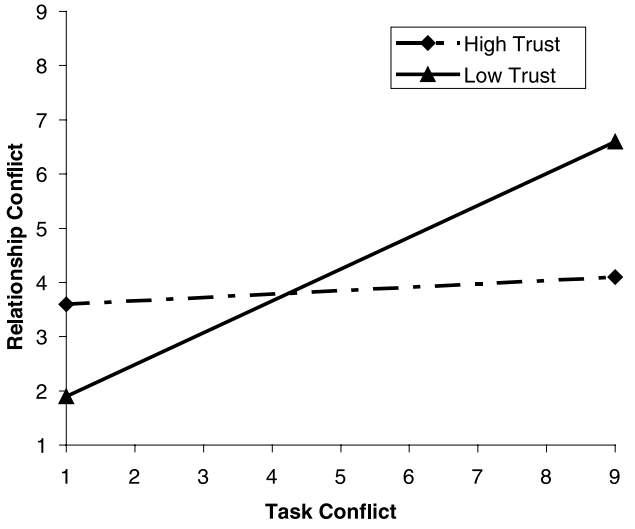

Fig. 1. Computed slopes of regression line at one standard deviation below and above the mean for intragroup trust.

indicates that high levels of task conflict coupled with low levels of trust lead to high levels of relationship conflict. When trust levels are high, task conflict is only weakly associated with relationship conflict. This same result holds even after controlling for relationship conflict at time 1. These results, taken with the results of Hypotheses 1a and 1b, point towards negative performance feedback on the first group project as a primary trigger for later relationship conflict. Taken together, the results also suggest that intragroup trust is a key ingredient for stopping the early task conflict triggered by negative feedback from being transformed into later relationship conflict, even under conditions of unambiguous performance feedback. The slopes associated with the interaction between task conflict and trust are shown in Fig. 1.

Discussion

This study makes a number of important contributions to the literature on conflict in work teams. By standing the traditional view of group process and performance on its head, our study suggests that the relationship between group process and performance is more dynamic than previously established. Our results expand the established process–outcome view of groups performance by specifically suggesting that past performance predicts future group process. In other words, our results suggest that group process (e.g., task and relationship conflict) can be both a cause and effect of poor performance. For example, our results revealed that relationship conflict at time 2 was significantly predicted by both relationship conflict at time 1 and grades at time 1 (even when each is controlled for the other). These results suggest that destructive relationship conflict in established teams engaged in ongoing work can be predicted from both early relationship conflict (i.e., they disliked each other from very early on), and negative performance feedback (i.e., the fallout of blaming each other for group failure). Our data also reveal that time 2 relationship conflict completes the next stage of the cycle by predicting change in grade between time 1 and time 2 ($r = -.30$, $p < .05$), suggesting that high time 2 relationship conflict explains continued performance decline.

Similarly, task conflict also appears to be an effect of feedback indicating poor performance. In our regression analysis we show that early relationship conflict does not predict subsequent task conflict, but that task conflict at time one and grade at time one do predict later task conflict. The correlation between time 2 task conflict and change in grade is marginally and negatively significant ($r = -.24$, $p < .10$), raising questions about its significance and direction for predicting group performance. It may be that people understand that conflict about opinions and ideas is a natural part of working with others to get work done, whereas relationship conflict is a negative interference to getting work done. Task conflict may therefore be exogenous to the models investigated here—so for example, it is possible that task conflict is a product of something not in our model, such as group composition (e.g., member personality, demographics, etc.) (i.e., Moynihan & Peterson, 2001; Pelled, 1996). Further research is needed to elucidate this point.

Finally, our results also suggest that teams are at particular risk of experiencing extremely high relationship conflict and poor future performance when two conditions are simultaneously met; teams that do not establish trust before they receive negative feedback are especially vulnerable to ongoing relationship conflict, and likely to perform poorly.

Limitations of this study

As always, the results of any one study are never perfect. This study has at least two important limitations to consider. The first is that we did not directly measure attributions for conflict in this study, despite the fact that this is an important part of our theorizing. It is possible, therefore, that although our hypotheses were supported, that our explanations for them are incorrect. For example, we found that negative performance feedback predicts greater task conflict at time 2. We suggest that this happens because group members engage in a search for understanding about why performance was poor. However, it is possible that this occurs for some other reason (e.g., a search for justification for why the source of the feedback may be wrong and the group ultimately correct). We have no direct way to address such questions. Testing such questions by measuring attributions remains for future research. However, the longitudinal design of this study does, at least, eliminate some important alternative explanations for the effects we found (e.g., controlling for both task and relationship conflict at time 1 when predicting task conflict at time 2 eliminates the alternative notion that group composition is the only significant predictor of task conflict).

The second general limitation of this study is that it was done on MBAs working on class assignments rather than on organizational teams. This raises two interrelated issues. The first issue is that this is a unique population that does not represent the general working population. The second related issue is that these teams were working on class assignments rather than organizational work. It is possible that these groups were not as committed to their group work because it was for a class assignment rather than for work. This limitation, however, should be weighed against the significant (and related) strengths of the study. First, the study investigates an area that has received only scant attention in the literature and suggests an additional way of

understanding the relationship between group conflict and performance. Second, the study looks at ongoing groups doing meaningful work (as opposed to experimental studies of nominal teams doing work that is does not have meaningful consequences), allowing us to get a better understanding of the dynamic feedback–process relationships as experienced in real teams doing work that is meaningful to them. Third, the longitudinal design of our study allowed repeated access to a stable set of participants in their initial stage of development—a critical advantage for understanding the origins of conflict before intragroup conflict and group performance become hopelessly intertwined (cf., Lindsley et al., 1995).

Implications of this study

We believe our study has important scholarly implications that may illuminate the beginnings of a spiral for groups, particularly a downwards spiral (as opposed to an upwards spiral after positive feedback) (see Lindsley et al., 1995 on performance spirals). Our results suggest, for example, that the strong documented association between relationship conflict and poor group performance may actually be dynamic—suggesting that relationship conflict can result from negative performance feedback in addition to relationship conflict leading to poor performance. In fact, the strong association between the two emerged only *after* performance feedback occurred in our study. Our suggestion here that this could be the start of a downwards spiral is also consistent with past research showing that groups are particularly sensitive to negative rather than positive feedback information (Guzzo et al., 1986). In short, we argue that this study suggests that negative performance spirals can be induced in groups via strongly negative performance feedback before a group has established trust.

In addition to the scholarly interest of this study, our results suggest at least two important and closely intertwined implications for the management of teams. First, our results suggest that managers need to understand that unambiguous negative performance feedback can have serious repercussions for future group process and performance. Strongly negative feedback may not encourage strong future performance, or even result in regression to the mean, it may well encourage future failure by sending the group into a downward spiral of relationship conflict and poor performance, as happened to many of the groups in our study. This may also be particularly true if the feedback was directed at any of the group members individually. In their review of the literature at the individual level, for example, Kluger and DeNisi (1996) found that task-focused feedback was effective and feedback directed at an individuals' personal style was ineffective at improving performance because it was threatening to the individual. By the same token, if groups get focused on individual contributions and interpersonal issues (i.e., relationship conflict) rather than the task at hand (i.e., task conflict) they may be more likely to continue to do poorly into the future.

Strongly positive feedback, on the other hand, may well encourage future success by reducing relationship conflict and improving performance. The literature on collective efficacy broadly supports this conclusion. Consistent positive feedback should encourage high collective efficacy, which in turn should encourage persistence in problem solving and improved performance (Bandura & Schunk, 1981). This can, of course, go too far. Groups can become excessively confident to the point of not feeling the need to engage in critical thinking (i.e., healthy task conflict) and serious evaluation of alternative courses of action, thus leading to performance failure (Whyte, 1998; Whyte & Peterson, 2001). The dynamics of that process are not yet well understood and also need further research attention.

An additional area for future research is the delivery of negative feedback by a leader (i.e., coaching). The reaction of a leader to a group's performance, and treatment of the group (or individual members) after receiving negative feedback, might also strongly influence future group conflict (see Staw, 1975, for a review). Relatively little is known about how different types of feedback offered to groups affects future conflict and performance. Here the feedback given was quantitative (with some written comments), performance-based, and comparative with other groups. It is left for future research to explore whether these effects will replicate if the feedback is judged against some external standard (vs. comparative) and process based (vs. performance). It is not clear from this study whether other kinds of feedback create the same conditions of perceived threat that often leads to increased dependence on a group leader (Staw et al., 1981). Follow-up coaching (Hackman, 1990) may be an important element to helping group members get over both internal and external causes of their low performance. Staw et al. (1981) predict that there may be different effects on group process depending on whether a group attributes its failure to internal or external causes. In this paper, we implicitly assume an internal attribution hypothesis. Our sample is contained and is not exposed to political or financial constraints on performance. Therefore, any decrease in performance is prima facie derived directly from the result of member contributions. Future research on what happens to group process after external vs. internal causes of performance failure will help to elucidate effective methods of feedback delivery.

In sum, this study tracked conflict processes and outcomes over time in 67 teams working on tasks that were meaningful to them. Results revealed here both replicate a number of past studies and fit within a number of existing theoretical perspectives. For example,

task and relationship conflict were correlated on average $r = .74$, easily within the range of existing studies (see de Dreu & Weingart, in press). We also found replications of the moderating effects of trust between task and relationship conflict, but also show that this effect holds after clear feedback. Finally, our results are consistent with past theorizing on performance spirals. Taken as whole, our research sheds some new light on our understanding of the relationships between group performance, trust, and conflict, suggesting it is more dynamic than most existing research implies. We specifically suggest the notion that past performance can have subsequent effects on task and relationship conflict in work teams.

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