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Status Disagreement: Consequences for Group Performance and Group Member Behavior

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Abstract

We explore the phenomenon of status disagreement in groups, which occurs when two group members both believe they have higher status than each other. Across two studies, we investigate the consequences of status disagreements for group performance and group member behavior. In Study 1, we incite status disagreement in groups working together in the laboratory, and analyze members' behavior using detailed observation from videotape. In Study 2, we observe naturally occurring status disagreements in group of students working on a longer-term class project, and employ Hierarchical Linear Modeling and the Social Relations Model (Kenny & LaVoie, 1984) for behavioral analyses. In both studies, we find a negative association between status disagreement and group performance. Further, analyses of group member behavior indicate that this relationship is primarily due to reduced contributions by individuals engaged in status disagreement. These findings speak to the importance of status disagreement for group dynamics and suggest that purely cooperative conceptions of status differentiation may be incomplete.

Imagine a project team with four people, Tom, Elizabeth, Sarah, and Jeff. Prior research suggests that even in the absence of any formal hierarchy or pre-assigned roles, an informal status ordering will emerge among these four people. That is, some members will be more respected and influential than others (e.g., Bales, Strodtbeck, Mills, & Roseborough, 1951).

However, what happens when group members disagree over their relative status? For instance, what if Tom believes that he has higher status than Sarah, whereas Sarah believes she has higher status than Tom? How will this *status disagreement* affect their behavior? How will it affect the group's overall functioning and performance? Although many theorists have acknowledged the possibility of status disagreements in groups, no research has systematically explored their implications for group functioning. In this paper, we fill this gap by examining the consequences of dyadic status disagreement in small, face-to-face groups.

Theoretical Background

The Formation of Informal Status Hierarchies in Groups

Status is defined as the level of prominence, respect, and influence that individuals have in a group (Anderson, John, Keltner, & Kring, 2001; Goldhamer & Shils, 1939). Present in virtually all groups, informal status differences are highly consequential for group functioning (Bales et al., 1951). Through the differential distribution of status and influence, informal hierarchies assist groups in coordinating activities, executing plans, and motivating their members (Blau, 1964; Magee & Galinsky, 2008). Those at the top of the status order tend to shape the group's internal culture, make decisions, and determine the group's overall direction (Berger, Rosenholtz, & Zelditch, 1980), whereas those lower in the status order carry less influence and are generally less respected by other members.

Given the importance of status for both groups and individuals, researchers have long been interested in the processes by which status differences develop. The prevailing view in the status literature is that status differentiation is a largely peaceful and cooperative process (Berger, Zelditch, & Cohen, 1972; Ridgeway, 1987). Group members are thought to evaluate one another in terms of the value that each provides to the group and to allocate status accordingly. Therefore, high status is bestowed upon individuals perceived to be able to contribute the most to the group's success. For example, studies have shown that two personal characteristics highly valuable to groups – task competence and a strong commitment to the group's success – are primary predictors of status attainment (e.g., Ridgeway, 1987; Hardy & Van Vugt, 2006).

This begs the question, however: is hierarchy formation always a peaceful and cooperative process? More specifically, do group members always agree about their relative status rankings? Prior work has found significant agreement among group members with regards to the informal status ordering; however, there is rarely perfect consensus (e.g., Anderson & Kilduff, 2009). Further, there are several theoretical reasons to believe that status disagreements between group members may not be as rare as prior theory would suggest.

First, group members' perceptions of each other's value are often subjective. In the absence of clear indicators of others' competence or commitment to the group, members must rely on superficial and potentially ambiguous cues such as physical appearance or nonverbal behavior to infer those traits (Berger et al., 1980; Carli, LaFleur, & Loeber, 1995; Driskell, Olmstead, & Salas, 1993; Ridgeway, 1987). Therefore, status disagreements might arise from uncertainty regarding which members provide the group with the greatest value. Second, group members may not always agree about which individual characteristics are most important to the group's success. For instance, some might prioritize cognitive ability, whereas others might believe that

seniority and experience are more important. Finally, high status within a group carries with it a number of individual rewards, including increased respect, admiration, attention and prominence (Bales et al., 1951; Berger et al., 1972), which in turn can lead to higher levels of self-esteem and well-being (Barkow, 1975; Frank, 1985; Leary, Cottrell, & Phillips, 2001). Therefore, group members may be reluctant to fully recognize the qualifications of others and may instead try to assert their own higher status.

Indeed, many researchers have recognized the possibility that status disagreements arise within groups (e.g., Mazur, 1985; Owens & Sutton, 2002; Rosa & Mazur, 1979; Thibaut & Kelley, 1959). However, researchers have yet to systematically study these disagreements and their implications for group dynamics. Therefore, across two studies, we investigated the consequences of status disagreements for group performance and group member behavior. In Study 1, we examined groups of previously unacquainted individuals within the controlled setting of the laboratory, which allowed for detailed observation of group member behavior through videotape. In Study 2, we observed student teams who worked on a course project over a period of 10 weeks, and used Kenny and La Voie's (1984) Social Relations Model to analyze peer-ratings of behavior.

Status Disagreement and Group Performance

We define a status disagreement as a disagreement between two group members over their status relative to each other. More specifically, we focus on situations in which both members believe that they have higher status than the other person. For example, a status disagreement exists if member A believes that he has higher status than member B in the group, whereas member B believes that she has higher status than member A. This definition is based purely on the group members' perceptions of their relative status; the extent to which status disagreements

play out in actual behavior or in interpersonal conflict is an empirical question – one that we address in the current paper.

How might status disagreements affect group performance? On one hand, it is possible that they could benefit group performance. Pairs of individuals who disagree over their relative status might attempt to demonstrate their value and status by increasing their contributions to the group. As mentioned, higher status is generally desirable (e.g., Barkow, 1975; Frank, 1985), and the presence of another person vying for the same status ranking may serve as additional motivation. Therefore, status disagreements could foster a kind of healthy “status competition” – with both members trying to outdo each other in terms of contributions to the group – that ultimately benefits group performance. Indeed, prior researchers have argued for the potential benefits of status competition (Loch, Huberman, & Stout, 2000; Sutton & Hargadon, 1996; Owens & Sutton, 2002).

On the other hand, functional theories of status suggest that by and large, status disagreements should be detrimental to group performance. First, contrary to the idea that they will foster healthy “status competition,” status disagreements could reduce, rather than increase, individuals’ contributions to the group. Hierarchies are thought to aid group functioning by awarding high status to individuals who provide the greatest value to the group. This in turn motivates team members to contribute and maintains the commitment of highly valued members (Blau, 1964; Emerson, 1962; Ridgeway, 1987). Indeed, recent work shows that individuals who are awarded higher status by their teammates respond by contributing even more to the group than they had in the past (Willer, in press). However, by definition, group members engaged in status disagreements do not afford each other the status that each expects. Thus, these individuals may feel underrewarded, underappreciated, and perhaps even disrespected, all of

which could reduce their motivation and contribution to the group's activities. Indeed, disrespectful treatment has been linked to reduced commitment to group goals and concerns (Miller, 2001). Overall then, status disagreements that lead to healthy "status competition" might be more the exception rather than the norm – instead, people may typically react by reducing their contributions to the group.

Second, individuals engaged in status disagreements might exhibit higher levels of negative or confrontational behavior, such as interrupting others, attempting to impose their will, and expressing hostile emotions, which could hamper group functioning. One of the theorized benefits of an agreed-upon hierarchy is a reduction in confrontational behavior because it obviates the need for individuals to repeatedly negotiate their status (Barkow, 1975). Individuals who disagree over their relative status, however, will not have this basis for peaceful interaction. Further, these individuals may feel disrespected by each other, which is a primary source of anger and can lead to a range of antisocial behaviors (Miller, 2001; Folger & Skarlicki, 1998; Gicalone & Greenberg, 1997).

Lastly, moving to the group level of analysis, status disagreements could interfere with the group's overall coordination of activity, which is generally seen as one of the primary functions of status hierarchy (Berger et al., 1980; Blau, 1964; Leavitt, 2004; Thibaut & Kelley, 1959; Weber, 1946). That is, in addition to potentially increasing the frequency of personal disagreements and confrontational behavior between group members, status disagreements could also cause disagreements regarding member responsibilities and task decisions. In essence, a problem of having "too many cooks in the kitchen" could emerge, with too many group members giving out directives and too few taking suggestions from others, thus preventing the group from functioning smoothly.

Overall then, functional accounts of status hierarchies lead us to predict that status disagreement will hamper group performance. Although the occasional disagreement over perceived relative status might lead to the kind of overt and motivating status competition that can benefit group performance, this is likely to be the exception rather than the rule. Some indirect empirical evidence supports this prediction. A recent study showed that teams of stock analysts made up of a high proportion of externally high-status individuals suffered from decreased performance (Groysberg, Polzer, & Elfenbein, 2004). Status disagreement would seem a prime candidate for the mechanism underlying this finding, as collections of high-status individuals may have difficulty resolving their relative standing. Further, research on dominance complementarity finds that people are more comfortable and satisfied with interaction partners who complement, rather than mimic, their levels of dominance behavior (Tiedens & Fragale, 2003). Overall, “dominance complementarity bodes well for task-oriented relationships” (Tiedens, Unzueta, & Young, 2007, p. 402), suggesting that more dominant individuals work better with more submissive individuals and vice-versa. This is consistent with the idea that individuals engaged in status disagreement – who will be unlikely to exhibit dominance complementarity, given that they disagree about who is higher in status – will not work well together.

Overview of Studies

We investigated status disagreement with two complementary studies. The first study looked at groups in the laboratory, which allowed for tighter controls and methods, as well as a more in-depth analysis of group member behavior. The second study investigated student project teams from classrooms over time, which allowed for increased ecological validity and longitudinal examination of the consequences of status disagreements. In addition to investigating the

relationship between status disagreement and group performance, we also explored the mechanisms behind this relationship. In Study 1, we assessed individuals' behavior via ratings made by independent coders who watched videotape of the groups interacting. In study 2, we measured individual behavior via peer-ratings, and also assessed the levels of relationship, task, and process conflict within groups via self-report items (e.g., Jehn & Mannix, 2001).

Study 1

In Study 1, we examined status disagreement within the controlled environment of the laboratory, with groups of participants working together on a joint task. The use of a lab setting provided a number of advantages. First, we were able to construct groups in which no group member knew any other member, which allowed us to examine the emergence of status disagreement from the inception of each dyadic relationship. Second, the lab setting allowed us to videotape participants' behaviors, which provided detailed measures of group member behavior. Third, we were able to collect individuals' perceptions of status prior to any interactions between group members, which helped provide stronger evidence for the causal priority of status disagreements on group member behavior and group performance. In contrast, if we measured status disagreements after the group had interacted for some time, it would be less clear as to whether status disagreements were causing certain patterns of behavior and group performance, or whether those behaviors were leading to status disagreements.

Although the laboratory setting provided several advantages, it also introduced a concern: status disagreements in laboratory groups might be too infrequent to allow for systematic study. Members of real-world task groups are often motivated to achieve high levels of group performance in addition to status within the group, due to financial incentives, broader implications for career success, and consequences for self-esteem, among other reasons. In

contrast, participants in laboratory groups might not care enough about their group's performance or their own status to engage in status disagreement.

To address these issues, we constructed a somewhat novel design aimed to promote status disagreements and provide group members with status incentives that more closely mimicked those present in real-world task groups. Specifically, for each four-person group, we recruited two individuals who were high in the need for dominance (nDom; Jackson, 1984). We expected that both of these group members would be motivated to achieve high status, and would therefore be likely to engage in status disagreement – that is, each would perceive him- or herself as higher in status than the other. Furthermore, we privately offered each of these two status contestants a financial incentive to attain high status, thus providing them with an extrinsic incentive to achieve high status, in addition to their own intrinsic motivations.

Our primary focus in Study 2 was on these two status contestants. The other two members of each group – selected to be low in nDom – served simply to provide a group context. In a sense, our design was akin to dyad-focused studies of conflict more generally (e.g., Cohen, Bastardi, Sherman, Hsu, McGoey & Ross, 2007; Henderson, Trope & Carnevale, 2006), but with two additional individuals outside the dyad providing a group context. Finally, we offered all groups a financial incentive for performance, in order to increase task motivation and more closely simulate real-world task groups in which performance often carries financial implications (e.g., bonuses, job performance ratings, etc.).

Method

Participants

Participants were 80 undergraduate students at a West Coast university placed into 20 four-person same-sex groups, with the prerequisite that no two members in a group knew each other.

Two members of each group, the *status contestants*, were preselected to be high in need for dominance as assessed by a prescreening questionnaire (in the top 50 percent); the other two members, the *bystanders*, were pre-selected for their low scores on the need for dominance (in the bottom 50 percent).¹ Apart from these prerequisites and the occasional scheduling constraint, participants were randomly assigned to groups. Participants were 20.2 years old on average ($SD = 1.44$); 12 of the groups were female (60%); 2.5 percent of participants were African-American, 60 percent were Asian / Asian-American, 33.8 percent were Caucasian, and 3.8 percent were Latin-American.

Procedure

Each participant arrived at the lab separately and was led to his or her own separate room, to ensure that group members did not see each other before the group worked together. Participants were given a set of instructions describing the upcoming group task, which involved generating an idea for a web-based company – specifically, choosing a name and product or service, and briefly outlining the company’s goals and business strategies. Participants were informed that the group with the best proposal, as determined by the researchers, would receive a \$400 prize. Additionally, the two status contestants were each given a “Secret Agenda” that aimed to increase the probability that they would engage in a status disagreement by informing them of their financial incentive to achieve high status in the group:

“We are giving you a ‘Secret Agenda’ in today’s experiment. Specifically, while we ask that you work together with your teammates to produce a high quality proposal, we also want you

¹ We do not make any comparisons between contestants and bystanders, thus mitigating concerns over the use of a median split to create these groups. None of our analyses assume equivalence on need for dominance (nDom) for contestants, or a difference in nDom between contestants and bystanders; rather, contestants were simply selected to be higher than average on nDom in an attempt to increase the frequency of status disagreements. Further, our findings with respect to member behavior and group performance remain unchanged when controlling for the contestants’ nDom scores.

to become the group leader. In other words, you should take a leading role in working on the proposal; coordinate the group's activities; motivate the other members to create a winning idea; and overall, have influence over the group's decisions. We will give you a personal reward of \$20 should you achieve the 'Group Leader' position. That is, if you become the leader of today's group, you will be given \$20 in cash at the end of the experiment."

Each status contestant was also told that another member of the group had been assigned to challenge their leadership, to reduce concerns over contestant suspicion. That is, we thought it best to inform all contestants of the presence of a challenger, rather than risk the possibility that some contestants would be suspicious about this aspect of the study, which in turn might differentially affect their behavior as compared to those who were not suspicious. Further, status contestants were instructed not to discuss their secret agenda with the other group members, and told that none of the other group members were aware of their secret agenda.

It is worth noting that contestants were instructed to try to assume the position of group leader rather than "top status position," because leadership verbiage is more intuitive. Although leadership can be conceptually distinct from status, they are generally one and the same within small, face-to-face groups without formal hierarchy; higher status members are afforded increased influence and leadership responsibility (e.g., Berger et al., 1972; Anderson & Kilduff, 2009)."

Next, in order to measure status disagreement prior to any interactions between group members, we asked contestants to indicate their expectations of their status rankings in the group relative to their teammates. To provide a context for these rankings, we provided contestants with photographs of their teammates. That is, before participants met in groups, we took photographs of each participant, distributed these photographs to the status contestants, and had

the contestants indicate their expectations of where they and the other group members would rank in the status hierarchy during the upcoming group task.

The use of photographs to measure status expectations is supported by recent studies showing that first impressions based upon photographs can be remarkably accurate and predictive. For example, people are able to accurately infer a wide range of personality traits from photographs (Naumann & Vazire, 2009). First impressions from photographs have also been shown to predict the winners of political races (Todorov, Mandisodza, Goren & Hall, 2005). Lastly, a recent study showed that people were even able to predict the profitability of Fortune 500 firms based purely upon photographs of their CEOs (Rule & Ambady, 2008). Given these findings, we believed that photograph-based status rankings would provide sufficient context for individuals' status expectations. Further, by measuring status disagreement in this manner, we conducted more conservative tests of our hypotheses.

After the process of taking photographs and collecting contestants' status rankings was complete, participants were led to the "group room," where they worked together for 45 minutes while being videotaped. At the end of the session, all participants were paid \$30 for their participation and fully debriefed as to the nature of the study. After all sessions were completed, the researchers paid the highest performing group \$400.

Measures

Need for dominance. To select status contestants based on their need for dominance, we used the 16-item scale from the Personality Research Form (Jackson, 1984), $\alpha = .83$. The average score for the status contestants was $M = 13.05$, whereas the average score for the bystanders was $M = 7.78$. Some example items from the scale include "I would like to be an executive with power over others" and "I feel uneasy when I have to tell people what to do" (reverse-scored).

Status Disagreement. Based on the photographs we provided, the two status contestants in each group ranked all members of the group, including themselves, in terms of who would “lead the group (make decisions, coordinate group activities, and motivate the group),” with one being the highest rank and four being the lowest. As per our definition, pairs of status contestants who thought that they would outrank each other were coded as being in status disagreement. For example, a status disagreement existed if contestant A expected to rank higher than contestant B, yet contestant B expected to rank higher than contestant A. Our aim was to incite status disagreements in enough groups so that we could examine whether status disagreements predicted our group and individual-level dependent variables. As hoped, status disagreements emerged between the status contestants in 11 of the 20 groups, allowing us to compare groups with a status disagreement between the contestants to those without one, via use of a dummy variable (0: no status disagreement; 1: status disagreement).

Group performance. Two independent judges, blind to our hypotheses and research questions, evaluated each of the group proposals in terms of idea quality, thoroughness, and general appeal ($\alpha = .72$). The judges’ aggregate evaluations were highly correlated, $r(18) = .87$, $p < .001$ (all reported tests are two-tailed, unless otherwise noted) and thus were combined to form a total score out of 100 ($M = 73.2$, $SD = 15.2$).

Video-coded individual behavior. A third independent judge, also blind to our hypotheses, watched portions of each videotape and coded the behavior of status contestants on a number of dimensions, using a scale from 1 (“*Strongly disagree*”) to 7 (“*Strongly agree*”). Based upon research in the ‘thin slices’ tradition – which has documented people’s ability to form accurate impressions from brief periods of observation (e.g., Ambady & Rosenthal, 1993) – we had the

coder rate the first 10 minutes of videotape. In order to establish inter-rater reliability, we had two more judges, also blind to our hypotheses, code 25% of the videotapes.²

Four dimensions of behavior were rated based on our theorizing about how status disagreement might affect group performance. First, the judges rated task contributions using three items: “Contributed useful ideas,” “Put forth a lot of effort,” and “Is making important contributions to the task.” The items exhibited inter-rater reliability (average ICC = .74) and inter-item reliability ($\alpha = .79$), and were thus combined into a single aggregate measure of task contributions.

Second, judges assessed contestants’ negative or hostile behaviors using four items: “Is getting angry/frustrated/irritated,” “Is interrupting others when they try to speak,” “Is acting in a friendly manner towards the other members of the group” (reverse-coded), and “Is questioning and criticizing the ideas and suggestions put forth by other members.” The last of these items had no inter-rater agreement (ICC = .01) and was thus excluded from further analyses. The other three items exhibited inter-rater agreement (average ICC = .62), but did not correlate highly with one another ($\alpha = .16$), so we analyzed each of them separately.

Third, judges rated contestants’ levels of confrontational behavior of a slightly different vein: domineering or forceful behavior. The items used were: “Acting in a domineering manner,” “Acting aggressively,” and “Trying to exert control over the group’s activities.” The items exhibited high levels of inter-rater reliability (average ICC = .82) and inter-item reliability ($\alpha = .94$), and were thus combined into a single aggregate measure.

Finally, related to the notion that status disagreements might cause coordination deficits due to multiple members attempting to lead the group, the judges rated status contestants’ levels of leadership behavior, using three items: “Took a leadership role in the group,” “Took initiative in

² All five judges were undergraduate research assistants.

working on the group task,” and “Is asking other group members for their ideas and suggestions”; average ICC = .81, $\alpha = .73$. Further analysis indicated that the two aggregate measures of leadership and task contributions were highly correlated ($r(38) = .74, p < .001$), indicating that the individuals who engaged in leadership behaviors also tended to make more task contributions. In retrospect, this is unsurprising, given individuals' contributions to the group have been argued to include both specific task-related contributions as well as more managerial-type behavior (Berger et al., 1972; Lord, 1985). Therefore, we combined these two aggregates into a single aggregate measure of general contributions to the group ($\alpha = .85$).

Results and Discussion

Status Disagreement and Group Performance

To test the hypothesis that status disagreement hampers group performance, we ran a group-level regression analysis in which we predicted group performance with status disagreement. As predicted, group performance (as coded by independent judges) was strongly and negatively related to status disagreements between contestants, $\beta = -.51, t(18) = -2.50, p < .05$.³ Groups in which the contestants were engaged in status disagreement performed at a level approximately one standard deviation lower than groups in which contestants did not engage in a status disagreement (15.1 points out of a possible 100). The R^2 for the model was equal to .26, indicating that 26% of the variance in groups' performance was explained by the existence vs. absence of a status disagreement. This is quite substantial, particularly considering the lack of common methods (status disagreements were measured with participants' status rankings whereas group performance was assessed by independent judges).

Status Disagreement and Group Member Behavior

³ Given the small sample size, we conducted a power analysis. An analysis based upon observed means and standard deviations indicated power of .74 for this test (using a two-tailed test of significance).

We next sought to investigate the behavioral mechanisms behind the negative association between status disagreement and group performance. With respect to contribution, a group-level regression analysis indicated that status disagreement predicted significantly lower levels of contributions among status contestants, $\beta = -.49$, $t(18) = -2.38$, $p < .05$. However, status disagreement did not predict contestants' levels of negative emotion ($\beta = .22$, *ns*), interrupting others ($\beta = .15$, *ns*), or acting friendly ($\beta = -.10$, *ns*). Furthermore, status disagreement did not predict higher levels of domineering or aggressive behavior among contestants ($\beta = -.39$, $t = -1.81$, $p < .10$). Lastly, with respect to the level of coordination in the groups, the negative relationship between status disagreement and general contributions suggests that status disagreements were not causing a problem of too many leaders. To confirm this, however, we ran a regression on the aggregate of the three leadership-related contribution items, and did not find status disagreement to be a significant predictor, $\beta = -.35$, $t(18) = -1.59$, *ns*. Overall then, contestants who were engaged in status disagreement contributed significantly less to the group, but did not exhibit increased domineering or hostile behavior. Moreover, there was no evidence to suggest that status disagreement was associated with greater difficulty in coordinating group activity as a result of multiple members attempt to lead.

We next investigated whether the level of contributions put forth by status contestants mediated the negative relationship between status disagreement and group performance. To establish mediation, four conditions had to be met (Kenny, Kashy, & Bolger, 1998). First, status disagreement must predict group performance; second, status disagreement must predict status contestants' contributions. These two conditions have been met as described above. Third, the mediator must predict the outcome variable when controlling for the predictor variable; a simultaneous regression showed that group performance was predicted by status contestants'

contributions ($\beta = .56, t(17) = 2.82, p < .05$), but not by status disagreement ($\beta = -.23, t(17) = -1.19, ns$). Finally, a Sobel test of the reduction in the predictive power of status disagreement (i.e., the indirect effect) achieved significance ($z = 1.82, p < .05$, one-tailed test), thus satisfying the final condition for mediation. As displayed in Figure 1, the negative relationship between status disagreement and group performance was mediated by the contributions of the status contestants.

Study 2

Study 2 expanded upon Study 1 in a number of ways. First, we moved outside of the laboratory and sought to replicate our findings within groups of students who worked on a class project over the course of 10 weeks. Though the laboratory setting used in Study 1 provided several advantages, it was important to test whether status disagreement would have similar effects within real task groups and in groups where members worked together for a longer period of time.

Second, in Study 2 we studied a much larger sample of groups and examined all group members rather than just among a subset. This enabled us to use Hierarchical Linear Modeling (HLM) to test our hypotheses and also allowed us to investigate whether the effects of status disagreements can spread to other group members who are not involved in them. For example, if Members A and B are engaged in a status disagreement, how does that affect Member C's behavior, if at all? Furthermore, measuring status disagreements among all group members allowed us to assess the extent to which status disagreement vs. confusion over the status ordering more generally was driving reduced group performance. That is, groups with status disagreements might also be those in which members are uncertain about everyone's relative rank – for example, members A and B might not only disagree as to their status relative to each

other, but also on the relative status of members C and D. In turn, this lack of clear hierarchy could drive reduced performance separate from any effects of status disagreements, so it was important to disentangle the two.

Third, we measured status disagreement after the group members had met and interacted with one another. Although the pre-interaction, photograph-based measure of status disagreements in Study 1 allowed for somewhat clearer causal evidence, it was important to see whether similar results would emerge when examining disagreements measured after actual interaction.

Finally, to examine more thoroughly the mediating mechanisms underlying the relation between status disagreements and group performance, we included measures of Jehn's three-category model of group conflict, which includes relationship, task, and process conflict (e.g., Jehn, 1997; Jehn & Mannix, 2001). This provided group-level measures of hostility and coordination difficulties, in addition to allowing us to examine how status disagreement related to established forms of group conflict. Relationship conflict entails personal disagreements and emotional tension between group members, thus tapping into the general level of hostility within the group. Task conflict involves disagreements concerning group activities, procedures, and ideas; generally, conflict about how to approach the task at hand. Process conflict includes disagreements over group member responsibilities and resource allocation; i.e., conflict over who should do what. These latter two forms of conflict fit within our broad category of coordination deficits. Although we found no evidence for a mediating role of coordination deficits in Study 1, we wanted to expand our investigation beyond just aggregates of individual leadership behavior.

Method

Participants

Participants were undergraduate students enrolled in an organizational behavior course at a West Coast university. As part of a class project, they worked in groups of four to six students; only groups providing complete status ranking and peer-rated behavior data were included in our analyses.⁴ The final sample size was 268 individuals across 57 groups (average group size = 4.7), representing 68 percent of the total number of students in the class. Participants were 54 percent male and 21.4 years old on average ($SD = 2.4$ years); 1.5 percent were African-American, 57.6 percent were Asian / Asian-American, 31.7 percent were Caucasian, 4.6 percent were Latin-American, and 4.5 percent reported “other.”

Procedure

Participants were randomly assigned to groups and they worked together for 10 weeks on a project that involved the analysis of a real-world organization. Approximately one week after groups were formed, participants completed a brief online survey (*Time 1 Survey*), which provided our measure of status disagreement. Eight weeks later (one week prior to the project due date), participants completed a second online survey (*Time 2 Survey*). On this survey, participants rated the group’s performance, the amount of conflict within the group, and each other’s behavior.

Measures (Time 1)

Status disagreement. As in Study 1, participants ranked each member of their group, including themselves, in terms of who would “lead the group (make decisions, coordinate group activities, and motivate the group).” Status disagreements were again counted as occurring when two members of a group each ranked themselves higher than the other. Using these counts, we were able to measure the amount of status disagreement that each participant was involved in, in addition to the total amount of status disagreement within each group. At the group level, we

⁴ The software package used to implement Social Relations Model analyses, SOREMO, requires complete data.

divided the total number of status disagreements between all members in the group by the total number of possible disagreements (e.g., in a five-person group, there are 10 dyads and thus 10 possible status disagreements). In other words, this measure was equivalent to the proportion of dyads that were in status disagreement in a given group. The mean value for this measure was $M = .40$ ($SD = .19$), indicating that, one week after groups had formed, status disagreements existed in 40% of the dyadic relationships among group members. Further, all 57 groups had at least one status disagreement, and the level of status disagreement was unrelated to group size, $r(55) = -.13$, *ns*. At the individual level, we divided the number of status disagreements a person was involved in by the number of possible status disagreements that person could be involved in (i.e., the number of other members in that person's group; $M = .39$, $SD = .27$).⁵

Measures (Time 2)

Perceived performance. We were unable to obtain project grades (which were given to groups as a whole), and thus used a self-report measure of group performance. Participants rated the extent to which they believed their group had performed well on the project with two items: "Compared to other teams our team was more effective," and "I was satisfied with my team's performance," on a scale from 1 ("Strongly disagree") to 7 ("Strongly agree"). The items were highly correlated, $r(264) = .75$, $p < .001$ and thus combined into an aggregate measure of perceived performance. The median r_{wg} statistic (James, Demaree, & Wolf, 1984) across groups was .71, thus indicating agreement among teammates and justifying the creation of an aggregate measure (James, 1982; George & James, 1993). Finally, an HLM-based ANOVA indicated that there was significant between-groups variation on this measure, as indicated by an ICC(1) value

⁵ We also collected participants' grade point averages (GPA) at Time 1 to be used as a control for task competence and motivation. As it turned out, none of the results from the analyses we ran were meaningfully changed by the inclusion of GPA (average GPA, in group-level analyses) as a control variable. Therefore, in the interest of simplicity and using the full dataset (35 individuals did not specify their GPA), we present results from the models that do not include GPA.

of .23, $\chi^2(56) = 134.2, p < .001$. This indicates that 23% of the variance in perceptions of performance existed between groups, and allows for the meaningful investigation of group-level predictors (Hofmann, 1997; Hofmann, Griffin, & Gavin, 2000).

Ratings of behavior. We collected two types of behavioral measures in Study 2. First, participants rated the extent to which their teammates contributed to the group using the following items, on a scale from 1 (“*Strongly disagree*”) to 7 (“*Strongly agree*”): “Contributed useful ideas,” “Contributed a great deal of work,” “Put forth a lot of effort,” and “Took initiative in completing group assignments.” To analyze these peer-ratings, we employed the Social Relations Model (SRM; Kenny & LaVoie, 1984), and the associated software program SOREMO (Kenny, 1995). Specifically, for a given item and participant, SOREMO calculates a *target score*, which is essentially the average peer rating of that participant, controlling for average differences in ratings across groups. Further, SOREMO provides an estimate of the consensus among perceivers on each item in the form of *relative target variance*; larger values indicate that some targets consistently elicit higher ratings than others, which in turn indicates greater consensus among perceivers (e.g., Kenny, Kashy, Albright, & Malloy, 1996). It is important to note that relative target variance values should not be interpreted as alpha reliability coefficients (Kenny et al., 1996) – rather, an item is reliable enough to be analyzed when relative target variance is statistically significant (Kenny, 1994). SOREMO indicated statistically significant amounts of relative target variance for each of the contribution items ($M_s = .27, .41, .34, \text{ and } .29$, respectively), thus indicating significant consensus among group members as to who contributed more to the group. Further, the items were highly correlated with one another, $\alpha = .96$, so they were combined to form an aggregate measure of each individual’s contribution to the group.

Second, participants completed a ten-item group conflict scale that was closely adapted from prior work (Jehn & Mannix, 2001), using the same 1 (“*Strongly disagree*”) to 7 (“*Strongly agree*”) scale. The level of hostility and confrontational behavior within groups was assessed via the relationship conflict subscale: “There is emotional conflict within the group,” “People rarely get angry while working in the group (reverse-coded), and “There is relationship tension within the group.” These items were intercorrelated, $\alpha = .74$, displayed high inter-rater agreement, median $r_{wg} = .83$, and showed meaningful variance between groups, $ICC(1) = .34$, $\chi^2(56) = 192.8$, $p < .001$. Thus, they were combined into an overall aggregate measure that assessed the level of relationship conflict within each group. Coordination problems within groups were assessed via the task and process conflict subscales. Task conflict was measured with four items: “People in the group have conflicting opinions about the project we are working on,” “There is conflict of ideas in the group,” “There are rarely disagreements within the group about the task we are working on” (reverse-coded), and “People are critical of each others’ ideas” ($\alpha = .74$). Process conflict was measured with three items: “There is conflict about task responsibilities within the group,” “There are rarely disagreements about who should do what in the group,” and “There are disagreements about resource allocation in the group” ($\alpha = .69$). Median r_{wg} values were equal to .75, and .74 respectively, and there was also significant between-groups variance on both measures: $ICC(1) = .25$, $\chi^2(56) = 145.3$, $p < .001$ for task conflict and $ICC(1) = .17$, $\chi^2(56) = 108.3$, $p < .001$ for process conflict. Thus, we created group-level aggregate measures for both task and process conflict. Table 1 displays zero-order correlations between our group-level measures.

Results and Discussion

Hierarchical Linear Modeling

Given the nested nature of our data in Study 2 – individuals within groups – we used Hierarchical Linear Modeling (HLM) to run our analyses. HLM is well-suited for such datasets because it accounts for the interdependence of individuals within the same group, and it also allows for the analysis of variance both within and between-groups (Hofmann, 1997). To implement these analyses, we used the software package HLM 6.06 (Raudenbush, Bryk, & Congdon, 2008).

Status Disagreement and Perceived Group Performance

Group-level analysis. To test our hypothesis that status disagreement would negatively predict group performance, we ran a hierarchical linear model using perceived performance as the outcome, and group-level status disagreement as a Level-2 (group-level) predictor variable. This type of model is called an *Intercepts-as-outcomes* model and assesses the extent to which between-group variance in the outcome variable (perceived performance) is related to group-level predictor variables (status disagreement) (Hofmann, 1997; Hofmann, Griffin, & Gavin, 2000).

Model 1 of Table 2 contains the results from this analysis. As predicted, group performance was negatively related to status disagreement, $\gamma_{01} = -2.09$, $t(55) = -3.73$, $p < .001$, indicating that the more status disagreement within a group, the more poorly the group members reported performing. To assess the magnitude of this relationship, we compared the between-groups variance in this model to the between-groups variance in the null model that we used to obtain ICC values, as described by Hofmann, Griffin, & Gavin (2000). R^2 for status disagreement was equal to .31, indicating that the amount of status disagreement within groups, as measured at Time 1, accounted for 31% of the variance in reported performance between groups, as measured eight weeks later. As in Study 1, then, status disagreement appeared to be a relatively powerful

predictor of group performance. Although it is possible that this relationship was artificially strengthened due to the use of common methods (i.e., survey instruments), it is worth noting that our measure of status disagreement was constructed via dyadic comparisons of participants' rankings of the status hierarchy, whereas our measure of group performance was based on a simple rating scale; further, these measures were obtained eight weeks apart. Given the different format of these measures, in addition to the fact that participants did not have access to the status rankings put forth by their teammates (meaning that there was no way for individual participants to indicate that the group had higher levels of status disagreement), it seems unlikely that the relationship between these measures was driven by common response tendencies.

Individual-level analysis. It was possible that individuals involved in higher numbers of status disagreements – who tend to be in groups with higher levels of aggregate status disagreement, given that their own status disagreements contribute to the group's total – might have been dissatisfied with their group experience and thus rated their group's performance more poorly, even if the group was not performing worse. To address this alternative explanation, we ran a *Random Coefficient Regression Model* (Hofmann, 1997; Hofmann, Griffin, & Gavin, 2000) with perceived performance as the outcome and individual-level status disagreement as a Level-1 (individual-level) predictor variable, centered around the grand mean as advised by Hofmann & Gavin (1998).⁶ Individual status disagreement was not significantly related to individual perceptions of group performance, $\gamma_{10} = -.39$, $t(265) = -1.04$, *ns*, despite substantial statistical power. Thus, individuals involved in higher vs. lower numbers of status disagreement did not perceive their group's performance significantly differently from each other.

Status Disagreement and Group Member Behavior

⁶ All Level-1 predictors in the models presented are centered around the grand mean. These analyses were all also run using group-mean centering, with no meaningful differences in results.

Contributions to the group. Individual-level status disagreement significantly negatively predicted peer-rated contribution to the group, $\gamma_{10} = -.71$, $t(266) = -3.11$, $p < .01$. Therefore, consistent with Study 1, individuals who were engaged in more status disagreements at Time 1 were rated as contributing less to the group's activities at Time 2. This relationship also existed at the group-level, $\gamma_{01} = -.84$, $t(55) = -2.59$, $p = .01$ (a null model indicated significant between-groups variation, $ICC(1) = .13$, $\chi^2(56) = 95.4$, $p < .001$), which is displayed in Model 2 of Table 2. Thus, groups with higher levels of status disagreement at Time 1 reported lower levels of average member contribution eight weeks later.

Hostile and confrontational behavior. Groups with greater levels of status disagreement did not report significantly higher levels of relationship conflict, $\gamma_{01} = .82$, $t(55) = 1.27$, ns , as seen in Model 3 of Table 2. Thus, consistent with Study 1, status disagreement did not predict increased hostility or confrontational behavior between group members.

Coordination difficulties. As shown in Model 4 of Table 2, the level of status disagreement in groups was significantly related to amount of task conflict they reported experiencing, $\gamma_{01} = 1.02$, $t(55) = 2.14$, $p < .05$. However, group-level status disagreement did not predict process conflict, $\gamma_{01} = .61$, $t(55) = 1.38$, ns , as seen in Model 5. Thus, groups with higher numbers of status disagreements at Time 1 did report some degree of coordination difficulty at Time 2, in the form of increased conflict surrounding how to approach the group task.

Contextual analysis of contributions. The analyses above indicate that the more individuals were involved in status disagreements, the less they contributed to the group. However, did status disagreements involving other members of the group also predict individuals' levels of contributions? Perhaps status disagreements can create a general climate of dissatisfaction or apathy, resulting in a reduction in all group members' contributions to the group, not just those

involved in the disagreements. To address this question, we conducted a contextual analysis of individual contributions, following the procedure recommended by Kenny, Mannetti, Pierro, Livi, and Kashy (2002) for small groups data. Specifically, we ran an HLM model of individuals' contributions using two Level-1 predictor variables: the focal individual's level of status disagreement, as well as the amount of status disagreement in the group that did not involve the focal individual. Individuals' involvement in status disagreements was again negatively predictive of their contributions, $\gamma_{10} = -.73$, $t(265) = -3.21$, $p < .01$; however, the amount of status disagreement within the group that did not involve the focal individual was not significant, $\gamma_{20} = -.13$, $t(265) = -.56$, *ns*. Therefore, we have no evidence of a contextual effect, in that the effects of status disagreements did not seem to 'spread' to group members not involved in the disagreements.

Mediation of the Relationship between Status Disagreement and Perceived Performance

We next examined group member contributions and task conflict as possible mediators of the negative relationship between status disagreement and reported performance. To do this, we ran a model of group performance with both mediators entered simultaneously, in addition to status disagreement (Mathieu, DeShon, & Bergh, 2008; Leonardelli & Tormala, 2003; Model 6 in Table 2). In this model, which is graphically depicted in Figure 2, group member contribution was highly significantly predictive of performance ($\gamma_{02} = .88$, $t(53) = 4.69$, $p < .001$), whereas task conflict was not significant ($\gamma_{03} = -.26$, $t(53) = -1.65$, *ns*). Further, Sobel tests indicated that the indirect effect for group member contribution was significant ($z = 2.27$, $p = .01$, one-tailed test), but the indirect effect of task conflict was not ($z = 1.31$, *ns*). Thus, average levels of group member contribution partially mediated the negative relationship between status disagreement and group performance. It is worth noting, however, that the coefficient of status disagreement

remained significant, $\gamma_{01} = -1.11$, $t(53) = -2.63$, $p = .01$, thus leaving room for further investigation of potential mediators.

Status Disagreement vs. Status Confusion

Next, we investigated whether the observed negative association between status disagreement and group performance might be driven by a potential third variable – lack of consensus among group members about the overall status ordering, or “status confusion.” Specifically, groups likely vary in the extent to which there is general agreement about which group members rank highly vs. lowly in the status hierarchy. For instance, two members of a five member group might disagree about the relative rankings of the other three members, indicating overall confusion about the group’s hierarchy. It is possible that groups with high levels of status confusion also have more dyadic status disagreements, i.e., situations in which two members both believe that they outrank the other. Furthermore, status confusion might have a negative effect on group performance, given the potential disruption to the coordination of activity. Thus it was possible that the observed relationship between status disagreement and group performance was a spurious one.

To address this issue, we used SOREMO to calculate the level of consensus on status rankings within each group – target variance, in the language of SRM – and measured status confusion as simply the inverse of consensus on status rankings. On average, the level of status disagreement in a group was not correlated with the level of status confusion, $r(55) = .02$, *ns*. Furthermore, when both were entered as Level-2 predictors of group performance, status disagreement remained significant, $\gamma_{01} = -2.09$, $t(54) = -3.74$, $p < .001$, whereas status confusion had no relationship with group performance, $\gamma_{02} = .00$, $t(54) = .02$, *ns* (Model 7 of Table 2).

Therefore, it seems that there is something specific about dyadic status disagreements that can be harmful for group performance which is separate from status confusion more generally.⁷

Moderation by the status rank of contestants?

Lastly, we conducted a post-hoc analysis to investigate whether the status rank of participants involved in status disagreements moderated the negative relationship between status disagreement and performance. It seemed possible that status disagreements between high status members might be more harmful for group performance, given that these individuals have increased influence on group activity. To address this question, we measured the average status ranking (adjusted for group size) of contestants across all status disagreements in each group. For example, if a group had two status disagreements, one between its top-ranking member and its third-ranking member, and the other between its fourth-ranking member and its fifth-ranking member, then this measure would be equal to 3.25 (note that higher values indicate that status disagreements were between lower status members). An HLM-based simultaneous model of reported performance (Model 8 of Table 2) indicated that group-level status disagreement remained negatively predictive, $\gamma_{01} = -2.09$, $t(54) = -3.78$, $p < .001$; however, the average rank of contestants was unrelated to performance, $\gamma_{01} = -.17$, $t(54) = .75$, *ns*. We then standardized this new measure and created an interaction term with standardized status disagreement, to allow us to directly test whether the predictive power of status disagreement was moderated by the extent to which status disagreements involved higher-ranking group members. An HLM model with all three variables as Level-2 predictors (Model 9) indicated that standardized group-level status disagreement was significant, $\gamma_{01} = -.38$, $t(54) = -3.69$, $p < .001$; however, the other two variables were not significant, $\gamma_{01} = -.08$, $t(54) = -.57$, *ns* for the average rank of contestants, and

⁷ We also ran related analyses in which we controlled for standard deviation in status rank and contribution as measures of the clarity vs. ambiguity surrounding group members' standing in the hierarchy. Group-level status disagreement remained a highly significant predictor of group performance in these models.

$\gamma_{01} = .02$, $t(54) = .13$, *ns* for the interaction term. Thus, the negative relationship between status disagreement and group performance did not depend upon where status contestants ranked within their groups' informal hierarchies. This suggests that, at least within small groups of peers, status disagreements are equally detrimental whether they involve high or low ranking group members, perhaps because these groups require substantial contribution from all members to succeed.

Discussion

Across two studies, one that involved groups of strangers working together on a relatively short laboratory task and another that involved groups of students working on a course project over a 10 week period, we found that status disagreement was associated with reduced group performance. In fact, this relationship was quite strong, accounting for 26% of the variance in Study 1 and 31% in Study 2. We also found that this relationship was driven largely by a reduction in the contributions put forth by members involved in status disagreements. Status disagreement did not predict increased assertive, confrontational, or hostile behavior; instead, members involved in status disagreements seemed simply to disengage from the group's activities, thereby harming performance. Thus, although outwardly-obvious "status contests" may still occur from time-to-time, our findings depict status disagreement as generally a more subtle, de-motivating, phenomenon (although it may lead to some disagreement over how to approach group tasks). This depiction is also supported by our finding that status disagreements do not "spread" to other group members; rather, they only affect the behavior of those involved in them.

It is worth noting that, at least within our samples, status disagreements occurred with regularity. Ridgeway (1984) states that status disagreements are “not thought to be common” (62); however, even in the course groups in Study 2, which were not subject to any manipulations, we found that 40% of dyads were engaged in status disagreement, and that at least one status disagreement existed in all 57 groups. Thus status disagreements may be more common than cooperative theories of status would suggest. Interestingly, we think that our behavioral findings may help to explain this underestimation by prior researchers, in addition to the relative lack of research on the topic. Status disagreements, given their subtle nature, may go largely unnoticed by outside observers.

Overall, our findings suggest that status disagreement is a relatively common phenomenon with substantial implications for group dynamics and performance. These findings should appeal to both researchers studying status processes, in addition to groups researchers more broadly. Furthermore, they suggest important practical implications. For instance, managers might increase their success by being mindful of status disagreement and its potentially harmful consequences for team member motivation and group functioning.

Limitations

The two studies presented here were designed to complement each other’s strengths and weaknesses. Study 1’s limitations – the somewhat artificial nature of the lab setting, the staging of status disagreement, and the use of photographs to assess status disagreement – were addressed in Study 2 by the observation of longer-term class groups and the measurement of status disagreement after actual interaction. Study 2’s key weakness – the perceptual nature of our measure of group performance – was mitigated by the use of an objective performance measure in Study 1. However, there are some broad limitations of the paper as a whole that

should be addressed in future research. Most importantly, our findings are correlational, thus preventing us from definitively establishing that status disagreement caused reduced group performance and group member contributions. This concern is somewhat mitigated by the fact that we measured status disagreement prior to group interaction in Study 1, and employed a longitudinal design in Study 2. Even so, it is still possible that some unobserved variable underlies the relationships we observed.

Additionally, the samples employed in these studies were relatively homogeneous – participants were undergraduate students of similar age, and the majority were of Asian or Asian-American ethnicity. The extent to which our findings generalize to other populations remains an open question. For example, we tried to study group settings in which members were motivated to achieve high status – by offering financial incentives for status in Study 1, and by observing real groups of high-achieving students in Study 2 – yet it is possible that status disagreement might operate differently in groups of individuals who are even more motivated to achieve status. Perhaps, as some researchers have suggested (e.g., Owens & Sutton, 2002), status disagreement could promote motivation and performance within certain groups of highly driven individuals.

Finally, the tasks employed in both studies were of a fairly non-routine and interdependent nature. Status disagreement might not be as negatively related to performance among groups working on routine tasks, or on tasks that do not require group members to work so closely together. Thus, the generalizability of our findings to other task settings is another potential direction for future study.

Future Directions

The topic of status disagreement presents a number of directions worthy of future research. First, although we have shown that reduced contribution on the part of status contestants is behind the link between status disagreement and poor group performance, we still do not know exactly why this occurred. That is, why do status contestants involved in status disagreement contribute less to the group? In this paper, we focused on the observable behaviors that might explain the link between status disagreement and group performance; however, it would also be interesting to delve into the potential cognitive and intrapersonal processes that underlie this relationship, including feeling under-valued, feeling disrespected, or even simply being distracted.

Second, it would be interesting to investigate the extent to which people are conscious of status disagreements, and whether conscious vs. unconscious status disagreements might yield different effects. One can imagine both types of status disagreements occurring. Within certain group settings, members may be acutely aware that they disagree over their relative status and may even anticipate status disagreements prior to group interaction; within others, members may be generally oblivious to their status disagreements. In this paper, Study 1 contestants were notified of a “challenger” to the high status leadership position; however, in Study 2, it is not clear whether participants were aware of their involvement in status disagreement. Although our results were fairly consistent across both studies, future work could certainly investigate this issue further.

Third, future research should consider possible moderators of the relationships we observed. As we have already touched upon, it is possible that levels of task interdependence and group member motivation might moderate the negative relationship between status disagreement and group performance. Further, perhaps groups with stronger collectivistic norms, or with higher

levels of member identification and commitment, might be less prone to the pitfalls of status disagreement, as individual members may be more willing to set aside their personal needs for the good of the group.

Fourth, and related, it would be worthwhile to investigate potential interventions designed to diffuse status disagreement, or at least mitigate its potentially harmful effects. One possibility would be to explicitly outline team members' relative levels of expertise to try to reduce the likelihood of disagreements over relative status. Alternatively, to the extent that people are consciously unaware of status disagreement, perhaps simply pointing it out to them would help them to overcome its harmful consequences. These are but two of a number of possible solutions to the problems presented by status disagreement.

Finally, future work should examine the dyadic consequences of status disagreement. In this paper, we focused on the individual- and group-level consequences of status disagreement; however, it would also be interesting to assess how status disagreements affect things such as contestants' liking for each other and desire to work together. Overall, there are a range of interesting future directions for the topic of status disagreement. Beyond increasing our understanding of how status disagreement operates, the answers to these questions would also help determine whether teams may be able to intervene and mitigate its negative effects.

Concluding Remarks

We observed that when pairs of group members each believe that they have higher informal status than each other, they tend to reduce their contributions, thereby hurting group performance. Further, contrary to what others have assumed, these status disagreements were not uncommon. Status disagreement is not just the occasional jockeying of individuals for self

advancement – rather, it may be a fairly common phenomenon that can strongly affect the general success and welfare of groups.

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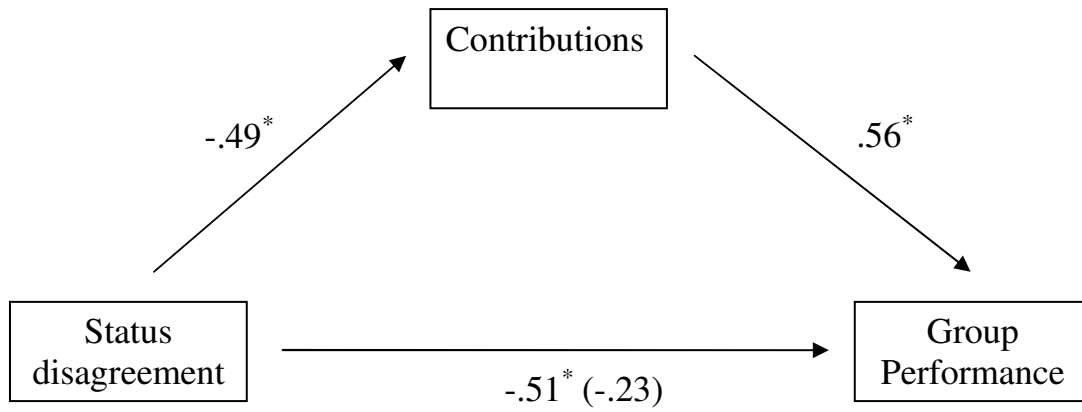
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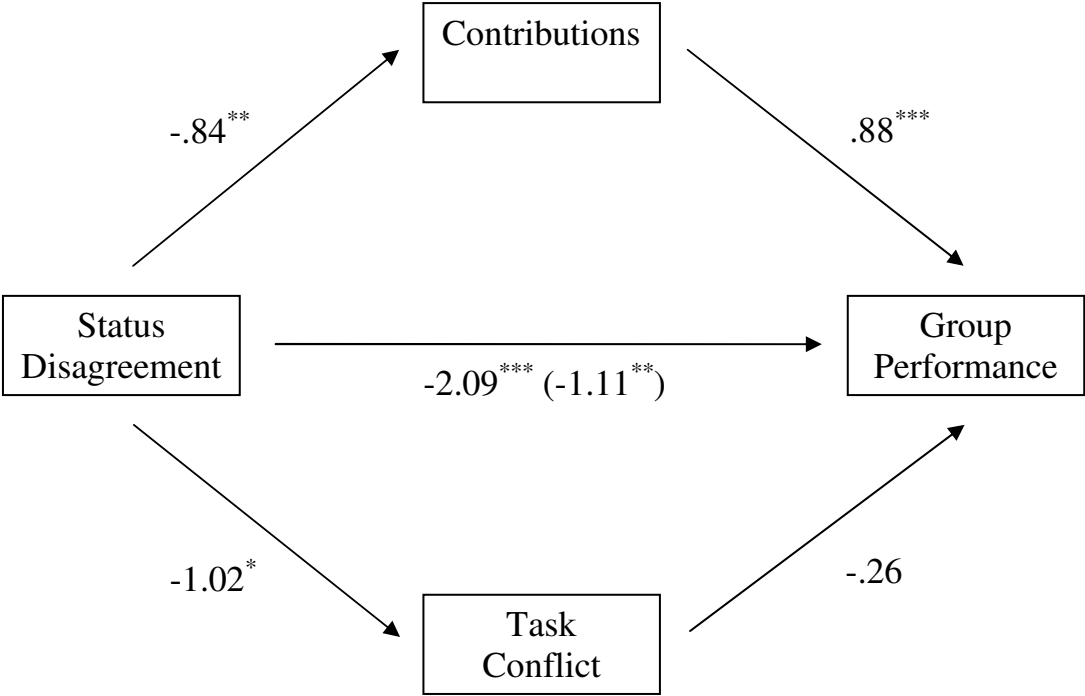
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* $p \leq .05$.

Figure 1. The mediating role of status contestants' contributions on the negative relationship between status disagreement and group performance.



* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$.

Figure 2. The mediating roles of group members' contributions and task conflict on the negative relationship between status disagreement and group performance.

Table 1
Zero-order Correlations (Group-level)

Variable	1.	2.	3.	4.	5.	6.	7.	8.
1. Status disagreement								
2. Perceived group performanc	-0.43 ***							
3. Confrontational behavior	0.11	-0.43 ***						
4. Group contributions	-0.30 *	0.65 ***	-0.23 †					
5. Relationship conflict	0.16	-0.63 ***	0.45 ***	-0.60 ***				
6. Task conflict	0.24 †	-0.50 ***	0.41 **	-0.43 ***	0.76 ***			
7. Process conflict	0.14	-0.55 ***	0.31 *	-0.51 ***	0.78 ***	0.77 ***		
8. Status confusion	0.02	-0.01	0.10	0.13	0.11	0.13	0.05	
9. Avg. contestant rank	-0.01	-0.08	-0.03	-0.22 †	0.13	0.01	0.21	-0.69 ***

Note. $N = 57$ student teams.

† $p \leq .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$; all values two-tailed.

Table 2
HLM Results (Group-level)

Variables	Model 1 Group performance	Model 2 Group contribution	Model 3 Relationship conflict	Model 4 Task conflict	Model 5 Process conflict	Model 6 Simultaneous mediation	Model 7 Status confusion	Model 8 Avg. contestant	Model 9 Interaction
Status disagreement	-2.09*** (0.56)	-0.84* (0.32)	0.82 (0.65)	1.02* (0.48)	0.61 (.44)	-1.11** (0.22)	-2.09*** (0.56)	-2.09*** (0.56)	-0.38*** (0.10)
Group contributions						0.88*** (0.19)			
Task conflict						-0.26 (0.16)			
Status confusion							-0.00 (0.10)		
Avg. contestant rank								-0.17 (0.22)	-0.08 (0.14)
Confusion X avg. contestant rank									0.02 (0.12)
Adj. R ²	0.31	0.22	0.01	0.06	0.02	0.92	0.28	0.28	0.28

Note. $N = 57$ student teams.

† $p \leq .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$; all values two-tailed.