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Failure at the Top: How Power Undermines Collaborative Performance

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All too commonly, we see groups of leaders fail to accomplish their stated goals when working together—legislators who cannot agree on a bill, heads of state who cannot draft meaningful environmental policy, or boards of trustees who make disastrous decisions for their school. The current research examines whether groups of leaders fail as often as they do in part because of the power each leader is accustomed to possessing among his or her constituents. In multiple studies we found that high power individuals, when working together in groups, performed worse than did other groups: individuals randomly assigned power in an initial task were less creative when they then worked together in groups on a subsequent task (Studies 1A and 4). Individuals with higher power who worked together in groups were also less likely to reach agreement on a difficult negotiation task, whether these groups comprised actual executives from an extant organization (Study 2) or participants randomly assigned power in the laboratory (Study 3). Mediation analyses suggest that groups of high power individuals performed worse because they fought over their relative status in the group, were less focused on the task, and shared information with each other less effectively. However, high power individuals were more effective when working on tasks that required less coordination: they were more creative (Studies 1B and 4) and persisted longer on a difficult task than other groups. Therefore, group processes are the key problem for groups of high power individuals when they work together.

Keywords: power, groups, status, conflict, creativity

Individuals in positions of leadership are afforded a great deal of power. They are given control over decisions and group processes, and their ideas and opinions hold more sway than those of others. However, what happens when leaders have to interact and work with other leaders? How does the power they are accustomed to possessing shape their effectiveness when working with others who also hold power? This question is critical because important decisions and problems are often addressed not by individual leaders but by *groups* of leaders—in legislatures, boards of directors, or meetings between heads of state, for example. If groups of leaders fail, the damage can be profound. Legislators who cannot agree on a fiscal budget risk dire economic consequences, university boards of trustees who set bad policy can damage their students' education, and leaders of disputing countries who fail to resolve their differences risk escalating their conflict into war.

On the one hand, one might hypothesize that the power leaders possess would help them perform particularly effectively in groups. Power is defined as an individual's capacity to modify others' states by providing or withholding resources or administering punishments (Emerson, 1962; Fiske, 1993; Keltner, Gruenfeld, & Anderson, 2003). The possession of power can boost individual task performance. When given power, individuals become more task-focused and goal-orientated, and more effective information processors (Guinote, 2007; Whitson et al., 2013). Power broadly influences an individual's goal system, which "affects motivation and information processing in ways that promote more situated judgment and behavior [allowing] individuals to attain desired outcomes more easily" (Guinote, 2010, p. 142). Further, power leads to greater task persistence and creativity (Galinsky, Magee, Gruenfeld, Whitson, & Liljenquist, 2008; Guinote, 2007; Smith & Trope, 2006). For example, Gervais, Guinote, Allen, and Slabu (2013) found that powerful people engaged in more creative thinking when creativity facilitated (rather than hindered) contextual goals. If power enhances individual performance as this evidence suggests, then by extension one might assume that groups comprised of high power individuals will perform better than groups of neutral or low power individuals. By a simple summation of their parts, groups of high power individuals should benefit from the additive effects of each individual's cognitive, affective, and motivational advantages.

However, this "sum of its individual parts" hypothesis ignores the critical role that *group processes* often have in determining overall group functioning and performance. Above and beyond having talented individuals, a group's performance depends on whether its members cooperate with each other, communicate effectively, and put

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selfish interests aside for the good of the collective (Hackman, 1990; Levine & Moreland, 1990; Kerr & Tindale, 2004; McGrath, 1964). Merely having superior talent is not enough for groups to be effective (Groysberg, Polzer, & Elfenbein, 2011), their members must also work together productively.

In the current research we test the hypothesis that when individuals with high power work with other high power individuals in groups, their power can have a *negative* effect on their performance. This hypothesis is based on prior work showing that the possession of power can cause individuals to behave in ways that hamper collaboration and effective interaction with others. For example, the possession of power can lead individuals to become overconfident in their own ideas (Sivanathan & Galinsky, 2007; Fast, Sivanathan, Mayer, & Galinsky, 2012), devalue the performance of others and take credit for others' contributions (Kipnis, 1972), become more self-focused and less concerned about others' welfare (Piff, Kraus, Côté, Cheng, & Keltner, 2010; van Kleef & Côté, 2007), become less polite (Keltner, Ellsworth, & Edwards, 1993), interrupt and speak out of turn (DePaulo & Friedman, 1998), and take others' opinions into account less (Briñol, Petty, Valle, Rucker, & Becerra, 2007; Galinsky, Gruenfeld, & Magee, 2003). Therefore, despite the performance benefits power can provide when individuals work alone, at the group level, the possession of power might disrupt group processes and, thus, dampen collective performance when individuals must coordinate.[1]

Prior Research

A few pioneering studies have begun to examine the effects of power on group performance. However, the findings from these studies are somewhat inconclusive. First, Greer, Caruso, and Jehn (2011) found that high power groups in an organization performed worse than other groups, consistent with our reasoning. However, those studies focused on powerful groups, rather than groups of people who individually have power and who must work together as a team—the focus of the current inquiry. Two studies came closer to examining teams of individuals who possess power individually, but they obtained different results: Groysberg and colleagues (2011) found that teams of financial analysts with a high proportion of "stars" (i.e., individuals who had been publicly recognized as high-performers) performed worse than teams with a moderate proportion of stars. Ronay, Greenaway, Anicich, and Galinsky (2012), on the other hand, constructed groups of uniformly high, uniformly low, or mixed-power individuals and found no performance difference between groups of high and low power members.

Second, if teams of high power individuals perform worse than other teams, the mechanisms underlying this effect remain unclear. Two aforementioned studies examined mediation: Greer et al. (2011) found in one study that process and relational conflict mediated the effect of power, whereas another study found process conflict only to mediate. Neither found task conflict to mediate. However, Ronay et al. (2012) combined all conflict variables together and found that overall intragroup conflict mediating the effect of high power (vs. medium power) but not any other comparison. It is, therefore, unclear which form of intragroup conflict matters. Furthermore, it is unclear from this work whether other additional mechanisms, above and beyond intragroup conflict, might also play a mediating role.

Third, the question of causality remains open. Greer et al. (2011) as well as Groysberg et al. (2011) conducted field studies and could not randomly assign members to groups or use experimental methods to establish causality. The only aforementioned study to use experimental methods (Ronay et al., 2012, Study 1) found null effects of power, for unknown reasons. Therefore, it is unclear whether the negative association between power and performance observed in Greer et al. (2011) or in Groysberg et al. (2011) was because of third variables, such as individual characteristics; perhaps individuals with certain characteristics tend to attain higher power, and these same characteristics lead individuals to work in groups less effectively.

The current research thus extends beyond existing work in a number of ways. It aims to conduct a more extensive examination of power in groups by using larger sample sizes and more robust experimental manipulations than have been used in prior research. These steps will help avoid the possibility of obtaining null effects of power simply because of low statistical power or to ineffective manipulations. It uses laboratory in addition to field designs to establish causality. It examines a wider range of potential relevant mechanisms to explain the effects of power (we elaborate on this issue in the next section). It examines a wider range of group tasks and performance variables, which helps establish the generalizability of the findings. It examines moderating conditions to better understand whether power might have positive rather than negative effects on group performance in some conditions (we elaborate on this issue below as well). Finally, it compares individual to group performance to rule out the possibility that any observed effects of power are because of individual rather than group processes.

The Mediating Role of Group Processes

As part of a more extensive examination of mediating mechanisms that might underlie the effects of power, we focused on four categories of processes: intragroup conflict over status, task processes, the positivity of intermember interactions, and other forms of intragroup conflict. These four kinds of processes have been shown in prior work to be important to group performance and to be likely affected by the possession of power. We outline our hypotheses regarding each of these processes below.

For the sake of simplicity, we will use the term "high power individuals" to refer to individuals who possess high power in one setting (e.g., in a prior task or social context) and who come together to work in a subsequent group, and "low power individuals" to refer to individuals who possess low power in one setting and come together to work as a group; "neutral" or "control" individuals possess neither high nor low power in a subsequent setting.

[1] Note that the abovementioned effects of power are not invariant. Many studies have shown that in some conditions, the possession of power can lead to heightened interpersonal sensitivity and attention to others (e.g., Côté et al., 2011; Overbeck & Park, 2001; Schmid Mast, Jonas, & Hall, 2009). However, a large body of findings suggests that power often leads to a behavioral pattern ill-suited to collaborating effectively in teams.

Status Conflict

Prior research suggests status hierarchies pervade social groups, in that some members tend to attain more respect, admiration, and influence than others (Anderson, Hildreth, & Howland, 2015; Bales, Strodtbeck, Mills, & Roseborough, 1951; Leavitt, 2005). Although status differences tend to emerge cooperatively, with group members voluntarily ceding status to others, sometimes disagreements can emerge (Ridgeway & Diekema, 1989). Such *status conflict* involves "disputes over people's relative status positions in the group's hierarchy" (Bendersky & Hays, 2010, p. 323), and not surprisingly, status conflicts can severely harm group performance, damaging both task-related contributions and the relationships between group members (Bendersky & Hays, 2010).

Based on many of the effects of power described above, we believe status conflicts are particularly likely to emerge in groups of high power individuals. As already mentioned, power engenders overconfidence in one's abilities (Fast, Sivanathan, et al., 2012; Sivanathan & Galinsky, 2007), which leads individuals to feel entitled to higher status (Anderson, Willer, Kilduff, & Brown, 2012). Power also causes individuals to afford little status to others: they give less credit to others' contributions (Kipnis, 1972) and are more rude and disrespectful (Keltner et al., 1993). Therefore, when high power individuals work with other high power individuals, they would likely feel entitled to higher status than they would be given. That is, when a high power individual moves from one context in which he unambiguously more power than others to one in which his power is less clear, the carry over effects of power will likely exacerbate conflict over status as the powerful seek to reassert themselves and claim the status to which they feel entitled.

Task Processes

The quality of a group's task processes is also critical to its effectiveness (Kozlowski & Bell, 2003; McGrath, 1964; Steiner, 1972). In particular, *task focus* is an important predictor of group performance: the less time or attention group members apply to a specific task the more likely their performance will be impaired (Karau & Kelly, 1992; Locke & Latham, 1990). We believe groups comprised of high power individuals are more likely to be distracted from the task at hand than other groups. As mentioned above, powerful individuals are more likely to pursue their own desires (van Kleef & Côté, 2007) at the expense of those of the group (e.g., completing their shared tasks).

Information exchange among members is also a critical component of group effectiveness. Group members must communicate their ideas and also integrate others' ideas into their own to generate optimal solutions to problems and reach agreement on difficult issues (Levine & Moreland, 1990; Shaw, 1971; Stasser, 1999). Previous research has shown that group performance suffers when group members fail to fully share or integrate the information available in a group (Argote, Ingram, Levine, & Moreland, 2000; Gruenfeld, Mannix, Williams, & Neale, 1996). We believe groups of high power individuals will fail to exchange information as effectively when they work together in groups. As noted above, high power individuals are ruder to others and attend less to others' opinions (DePaulo & Friedman, 1998; Galinsky et al., 2003). This pattern of behavior is likely to stifle both the motivation to share information with others and the integration of members' ideas synergistically.

Positive Interactions

Groups whose members express positive sentiments toward each other also tend to perform better (Barsade, 2002; Carnevale & Isen, 1986; Bramesfeld & Gasper, 2008; George & Zhou, 2007; Gibson, 2003). Positive interactions are seen to build trust and communication and motivate members to contribute more to the group (Cunningham, 1988; Isen, Rosenzweig, & Young, 1991; Mason & Griffin, 2005). However, we believe groups of high power individuals are less likely to engage in positive interactions with each other. High power individuals' propensity to interrupt more often and speak out of turn (DePaulo & Friedman, 1998), ignore others' perspectives (Galinsky, Magee, Inesi, & Gruenfeld, 2006; Overbeck & Park, 2001, 2006), and devalue others' contributions (Kipnis, 1972; Pfeffer & Cialdini, 1998) implies groups of high power individuals would be less likely to positively reinforce each other's ideas, thereby hampering collaboration, cohesion, and performance.

Other Forms of Intragroup Conflict

As mentioned above, Greer and colleagues (2011) found inconsistent findings for the mediating role of relational, process, and task conflict. We examined those forms of intragroup conflict, in addition to status conflict. Given many of the above arguments—for example that high power individuals will be ruder to each other and will fail to acknowledge each other's contributions—it is possible that these other forms of conflict will also emerge among teams of high power individuals. However, it is also possible that these other forms of conflict will be driven primarily by disputes over status; therefore, when status conflict is entered as a mediator, the other forms of conflict will fail to mediate.

The Moderating Role of Coordination

We also sought to understand the boundary conditions of the effects hypothesized above. If groups of high power individuals perform worse than other groups because of their more dysfunctional *group processes*, this suggests power would be particularly damaging to group performance for tasks that require higher levels of coordination among group members—for example, tasks in which group members must interact a great deal with each other, build from and integrate each other's input into their own work, synchronize their individual activities, and agree upon joint plans and strategies (Kozlowski & Bell, 2003; McGrath, 1964; Steiner, 1972). In contrast, the possession of power might not damage group performance for tasks that require less intermember coordination, such as ones in which members work individually and aggregate their work ex post (Hill, 1982). In fact, groups of high power individuals might outperform other groups for many tasks that require less coordination, given that possessing power can boost task-focus and goal-orientation (Guinote, 2007; Whitson et al., 2013).

Overview of Studies

We conducted five studies to test these predictions. In Study 1A we placed randomly selected participants in positions of power on

an initial task and had them work with a subordinate. We then had these high power participants work with other high power participants in groups on a subsequent creativity task. In Study 1B, to help rule out the possibility that power might have led individuals to be less creative in general (i.e., an individual-level cognitive effect), we replicated the design of Study 1A but had participants work on the creativity task alone. In Study 2 we addressed generalizability by examining "real world" power and using a different group task. Specifically, we examined groups of actual executives in a large organization who were tasked with reaching agreement on a difficult decision despite group members' differences in opinion. Study 3 used the same negotiation task from Study 2 but experimentally manipulated power allowing for causal inference. In Study 4, to identify potential boundary conditions we had participants complete a series of tasks that varied in the level of coordination required. We expected groups of high power individuals to perform worse on a task that required more coordination but *better* on tasks that required less coordination. In all studies we used objective measures of performance and in Studies 1A, 2, and 3, independent judges to assess group processes from videotape of the group's interactions, which allowed us to avoid some of the biases in self-reported group performance.

Therefore, in our four key studies—Studies 1A, 2, 3, and 4—we examined groups and our unit of analysis was the group. Our main proposition was that groups of individuals who had held power in a prior setting would perform worse than would other groups, in particular on tasks that require more coordination, because their group processes would suffer.

Study 1A: Group Creativity

Creativity and innovative thinking are becoming increasingly recognized as critical life skills (Runco, 2014; Simonton & Damian, 2013; Sternberg & Lubart, 1996), and particularly important skills leaders must possess (e.g., Sternberg, 2013). It is often the case that groups of high power individuals must think creatively to solve important problems and overcome challenges—whether they are trying to build an international treaty to restrict greenhouse gases, generate a new strategy for their firm, or agree on a fiscal budget for their state. Therefore, in Study 1A we examined groups that worked on creativity tasks.

We tested the hypothesis that groups of high power individuals (i.e., individuals who held power in another context) would be less creative than groups of low power and neutral individuals (i.e., individuals who held low power in another context or who did not hold high or low power in another context). To test this hypothesis we gave participants high, low, or neutral power in an initial task, and then had them work together in groups with other participants who had also possessed high, low, or neutral power in an initial task.

We also tested our hypothesis that high power participants would perform worse in groups because of the way they work together—that is, because of the processes that emerge in their groups. Specifically, as outlined in the Introduction we focused on the level of status conflict among group members, the quality of the processes they used to accomplish their task, and how positive was the tone of members' interactions with each other. Greer et al. (2011) examined task, relationship, and process conflict (De Dreu & Weingart, 2003; Jehn, 1994, 1995) and found some inconsistent effects on group performance, so we also measured those forms of conflict to establish whether status conflict mediated the effect of power above and beyond those forms of conflict.

Method

Participants. There were 174 participants (81 women, M_{age} = 20.39, SD = 1.83) from a large West Coast University who participated in the study for either class credit or cash payment ($15). All participants had the opportunity to earn additional money as outlined below. In total participants comprised 58 three-person groups (18 High Power, 22 Control, 18 Low Power).

Procedure. Participants completed an online survey before the laboratory session that included measures ostensibly used in the laboratory power role assignments (see Anderson & Berdahl, 2002; Galinsky et al., 2003). Six same-sex participants were then scheduled for each laboratory session. Upon arrival to the laboratory, participants were told they would be completing three tasks during the session including (a) a tower-building task in pairs, (b) a creativity task in groups, and (c) a second tower-building task in pairs again (in fact this second tower-building task was never to run, but was used to bolster the power manipulation). Participants were also told that for each task the highest performers could win one of several prizes worth $100.

To manipulate power, participants were randomly split into pairs and asked to work on a tower-building task in dyads. In some dyads, one participant was assigned to a high power role and given power over their partner; their partner was thereby assigned to a low power role. In other dyads, both participants were assigned to the control condition and neither had power.

After the tower-building task, participants were placed into three-person groups to work on a creativity task. Specifically, participants in the high power condition were grouped with the two other high power participants in their laboratory session, participants in the low power condition were grouped with the two other low power participants, and control participants were grouped with two other control participants.

Power manipulation. Each laboratory session was randomly selected to be either a treatment session or control session. In a treatment session, half of the six participants were assigned to the *high power* condition and the other half to the *low power* condition. In a control session, all participants were assigned to the *control* condition. Participants in the treatment session were told that to realistically simulate group decision making in organizations, some had been chosen to be leaders in the upcoming tower-building tasks, and others chosen as subordinates, based on their responses to the online leadership questionnaire (Anderson & Berdahl, 2002). They were also told leaders would evaluate the subordinates at the end of each task and that this evaluation would be used to determine how money would be allocated if the pair won one of the prizes described below (Galinsky et al., 2003). Participants in the control session were not told anything regarding role assignments but were merely asked to work together in dyads. Participants were then randomly assigned to dyads for the tower-building task, while ensuring that in the treatment session, high and low power participants were paired together.

Dyads were taken to separate rooms for the tower building task. Each dyad was given 30 tooth picks and 20 soft candy pieces ("dots"), and told that they had 5 min to build the tallest tower they

could using the materials available. In the treatment sessions, both dyad members were told that the high power participant was to make all the decisions and that the low power participant was to follow directions. At the end of the task the high power participants were taken to a separate room and asked to complete an evaluation of their partner's performance and indicate how much money the partner deserved if the dyad won a cash prize. (In fact, this evaluation was never used.) In the control sessions, dyads were simply asked to work together. After completing the tower building task, all control participants were taken to separate cubicles to evaluate their team's performance and indicate how money should be allocated if they won a cash prize. (These evaluations were also never used.)

Creativity task. After the tower-building task, participants were assigned to groups of three. Each three-person group was comprised of participants in the same condition, such that three high power participants worked in a group, as did three low power and three control participants. Each group was taken to a separate room and given 15 min to complete a creativity task that involved inventing a new organization and charting its strategy. This task has been used successfully in prior groups research and allows for the effective assessment of group creativity (see Anderson & Kilduff, 2009; see Appendix for full details). The experimenter clarified that the group's performance would be judged solely on the creativity of their overall ideas. They were videotaped while working together.

Manipulation and suspicion checks. At the end of the laboratory session, participants completed a three-item measure of power: "I was in control during the tower-building task," "I got to make the decisions in the tower-building task," and "I had more influence in the tower-building task," on a scale from 1 (*completely disagree*) to 7 (*completely agree*), $\alpha = .889$. Participants also were probed for suspicion using two-item open-ended suspicion probes (Chen, Lee-Chai, & Bargh, 2001): "Did you find anything strange or unusual about the experimental procedures?" and "What do you think is the purpose of this experiment?" Participants were then debriefed, thanked and paid. Across all four lab studies, no participants guessed our hypotheses or recognized how the two tasks were related.

Creativity ratings. Prior research has shown that group members' evaluations of their collective performance and processes and of each other can be more vulnerable to biases than outside observers' judgments (e.g., Ilgen, Mitchell, & Fredrickson, 1981; Miller & Schlenker, 1985; Rush, Phillips, & Lord, 1981; Schlenker, Weigold, & Hallam, 1990). Therefore, in this and all group studies that follow, we use outside judges' ratings of group performance and processes.

Two independent judges blind to condition later rated the creativity of each participant's idea with the item, "Using your own, subjective definition of creativity, please indicate the degree to which the idea is creative" (Amabile, 1979) from 1 (*not at all*) to 5 (*very*). Previous literature (e.g., Amabile, 1983, 1996; Amabile, Conti, Coon, Lazenby, & Herron, 1996) has differentiated creativity on the two dimensions of *novelty* and *usefulness*. Along an exploratory vein we examined how power affected both of these dimensions of creativity. The judges rated *novelty* with the item, "Overall, the idea is novel, i.e. ground-breaking rather than conventional or commonplace," and *usefulness* with the item, "Overall, the idea is useful, i.e. it solves a problem and is valuable and relevant," (both items rated from 1 (*disagree strongly*) to 5 (*agree strongly*). The reliability of judges' ratings was good for all three items (overall creativity $r = .78$, novelty $r = .82$, usefulness $r = .75$, $N = 58$), so the judges' ratings were averaged for each item.

Group process measures. Two independent judges blind to condition separately observed the videos and rated each group's processes. First, judges rated the degree to which groups exhibited status conflict: "members of the group competed for control over the group and its decisions" (adapted from Bendersky & Hays, 2010). They also rated task, process and relational conflict: "the group had frequent disagreements about the tasks they were working on," "the group had disagreements about who should do what, i.e. the process they should use," and "the group experienced personal conflict unrelated to the task" (adapted from Jehn, 1997; Jehn & Mannix, 2001). All items were rated on a 1 (*strongly disagree*) to 7 (*strongly agree*) scale.

Second, judges rated the groups' task processes, including information sharing ("The group shared all of their information with each other" from 1 [*strongly disagree*] to 7 [*strongly agree*]), task focus ("Overall, how focused was the group on accomplishing the task, i.e. how much did members appear to be engaged and attentive to the task itself?" from 1 [*very slightly/none at all*] to 5 [*very much*]; adapted from Barry & Stewart, 1997), and how integrative was the group ("Overall, how much did group members build upon each other's ideas? i.e., how much did group members integrate different members' ideas into a common solution?" from 1 [*very slightly/none at all*] to 5 [*very much*]).

Finally, to gauge the positivity of group interactions, judges rated the degree to which the groups exhibited positive affect ("In general, how much positive affect did you observe in the group? i.e., how interested, alert, attentive, excited, enthusiastic, inspired, proud, determined, strong, active were members of the group?" adapted from Watson, Clark, & Tellegen, 1988) and positive reinforcement ("How much positive reinforcement was given from one member to another? i.e., how much did group members accept, affirm, and complement each other's ideas?"). Both were rated on a 1 (*very slightly/none at all*) to 5 (*very much*) scale. All judges who coded these and subsequent videos were trained on how to interpret and code each measure using videos taken from pilot studies before coding the actual group interactions.

The reliability of judges' ratings for each measure was assessed after 20% of the videos had been rated and any conflicts resolved. Interjudge reliability was high for all dimensions: task conflict $r = .83$, relational conflict $r = .91$, status conflict $r = .74$, information sharing $r = .87$, task focus $r = .80$; integrativeness $r = .74$, positive affect $r = .93$, and positive reinforcement $r = .91$. Unfortunately, the video-recording system failed midway through the experiment, which led to the loss of 18 groups' videos (six groups in each condition). Analyses that involve group processes are, therefore, conducted on the remaining data.

Results

Summary statistics for Study 1A are shown in Tables 1 and 2. Age, race, and sex were not significantly related to power condition or creativity. Further, controlling for these variables did not significantly affect any of our results. Therefore, these variables were not considered further in the analyses below.

Table 1
Means and SDs of Measures by Condition in Study 1A

Measure	Low power	Control	High power
DV: Creativity	2.42[a] (1.11)	2.43[a] (1.00)	1.75[b] (.46)
Novelty	1.75[a] (1.15)	1.55[a] (.75)	1.00[b] (.00)
Usefulness	3.14[a] (1.05)	3.64[a] (1.08)	3.00[a] (1.03)
Status conflict	1.50[a] (.67)	1.94[a] (1.06)	3.25[b] (1.77)
Other conflict			
Task conflict	2.33[ab] (1.56)	1.81[a] (.75)	3.08[b] (.90)
Process conflict	1.33[a] (.49)	1.31[a] (.70)	2.08[b] (1.08)
Relational conflict	1.50[ab] (.67)	1.25[a] (.45)	2.00[b] (1.21)
Task processes			
Task focus	3.08[a] (.52)	3.25[a] (.58)	2.42[b] (.67)
Information sharing	4.42[a] (.67)	4.75[a] (.78)	3.75[b] (.45)
Integrativeness	3.33[a] (.65)	2.94[ab] (.44)	2.67[b] (.65)
Positive interactions			
Positive affect	3.00[a] (.95)	3.13[a] (.89)	2.75[a] (.62)
Positive reinforcement	3.08[a] (.67)	3.31[a] (.70)	2.33[b] (.65)

Note. Means with different superscript letters are significantly different, $p < .05$ (*t* test). *SD*s are in parentheses. $N = 58$ groups (18 high power, 22 control, and 18 low power) for creativity, novelty, and usefulness measures, $n = 42$ for other measures.

Manipulation check. The effect of the power manipulation on self-reported power was significant $F(2, 169) = 54.307$, $p < .001$, $\eta_p^2 = .391$. Participants in the high power condition felt more powerful in the tower-building task ($M = 5.91$, $SD = 1.40$) than those in the control condition ($M = 4.57$, $SD = 1.21$) and low power condition ($M = 3.20$, $SD = 1.45$), $p < .001$ and $p < .001$, respectively. The difference between the control and low power conditions was also significant ($p < .001$). At the group level, power condition was significantly related to average group self-reported power. $F(2, 57) = 63.957$, $p < .001$, $\eta_p^2 = .699$. The average group self-reported power in the high power condition ($M = 5.91$, $SD = .59$) was significantly higher than that in the control condition ($M = 4.59$, $SD = .72$) and in the low power condition ($M = 3.20$, $SD = .83$), $p < .001$ and $p < .001$, respectively. The difference between the control and low power conditions was also significant ($p < .001$).

Were groups of high power individuals less creative? Summary statistics are shown in Tables 1 and 2. Power condition significantly affected creativity, $F(2, 55) = 3.390$, $p = .041$, $\eta_p^2 = .110$; this effect is also illustrated in Figure 1. Groups of participants in the high power condition produced less creative ideas than groups of participants in the control condition ($p = .011$) and groups of participants in the low power condition ($p = .025$). There was not a significant difference between groups of participants in the control and lower power conditions ($p = .964$). The 95% bias-corrected confidence intervals (CIs; with 5,000 bootstrap samples) for the mean difference in group creativity scores were: high power versus control conditions [−1.1462, −.2566]; high power versus low power conditions [−1.1594, −.1503]; and control versus low power conditions [−.6354, .6978].

Along an exploratory vein we also examined the novelty and usefulness of the ideas generated. Power condition significantly affected the generation of novel ideas, $F(2, 55) = 4.342$, $p = .018$, $\eta_p^2 = .136$. As shown in Table 1, groups of participants in the high power condition produced less novel ideas than groups in the control condition ($p = .004$) and groups in the low power condi-

Table 2
Study 1A Descriptive Statistics—Group Level

	M	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Power[a]	22.00	20.81															
2. Male group dummy	20.53	20.50	−.00														
3. Average age	20.39	21.54	−.06	−.11													
4. Percentage White	20.20	21.63	−.03	−.18	−.12												
5. Status conflict	22.20	20.76	−.49**	−.06	−.43**	−.07											
6. Other conflict–task	22.35	20.74	−.25	−.18	−.15	−.17	−.47**										
7. Other conflict–process	21.55	20.69	−.35*	−.13	−.15	−.16	−.40*	−.57***									
8. Other conflict–relational	21.55	20.85	−.23	−.11	−.33*	−.08	−.43**	−.59***	−.28								
9. Task process–focus	22.95	20.68	−.39*	−.07	−.10	.17	−.45**	−.17	−.09	−.26							
10. Task process–information sharing	24.35	20.77	−.34*	−.09	−.01	−.06	−.40*	−.25	−.15	−.23	−.48**						
11. Task process–intergrativeness	22.98	20.62	−.42**	−.20	−.14	−.03	−.26	−.20	−.07	−.12	−.30	−.40*					
12. Positive interactions–positive affect	22.98	20.83	−.12	−.40*	−.09	−.00	−.30	−.35*	−.16	−.27	−.41**	−.34*	−.50**				
13. Positive interactions–positive reinforcement	22.95	20.78	−.38*	−.19	−.11	−.05	−.32*	−.39*	−.23	−.35*	−.53***	−.46**	−.53***	−.75***			
14. Creativity–overall	22.21	20.95	−.27*	−.15	−.03	−.03	−.47**	−.06	−.00	−.07	−.54***	−.43**	−.20	−.06	−.07		
15. Creativity–novelty	21.44	20.84	−.36**	−.14	−.11	−.04	−.39*	−.01	−.09	−.02	−.46**	−.25	−.09	−.08	−.07	−.80***	
16. Creativity–usefulness	23.28	21.08	−.05	−.23	−.02	−.05	−.15	−.00	−.29	−.01	−.24	−.35*	−.01	−.08	−.01	−.53***	−.32*

Note. $N = 58$ except for process measures (5 through 13) where $n = 40$.
[a] Power coded 3 = high power, 2 = control, and 1 = low power.
* $p < .05$. ** $p < .01$. *** $p < .001$.

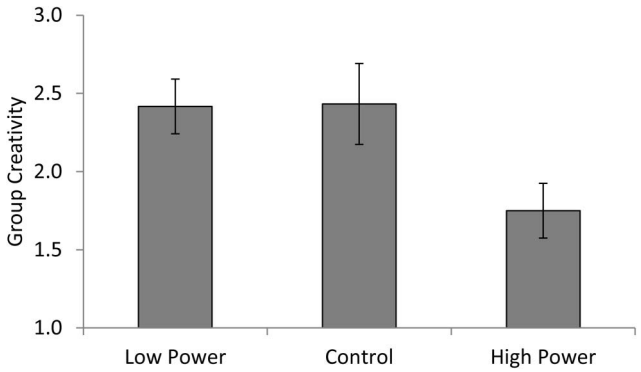

Figure 1. In Study 1A, creativity scores for groups of individuals in the low power condition, control condition, and high power conditions, respectively. Error bars denote 1 *SE* around the mean.

tion ($p = .009$). The difference between novelty scores of groups in the control and low power conditions was not significant ($p = .504$). In contrast to the novelty results, however, power did not affect the usefulness of the ideas produced, $F(2, 55) = 2.040$, $p = .140$.

Did groups of high power individuals engage in more status conflict? Also shown in Table 2, high power led to more status conflict $F(2, 37) = 6.655$, $p = .003$, $\eta_p^2 = .265$. It also led to more task conflict $F(2, 37) = 4.656$, $p = .016$, $\eta_p^2 = .201$, and more process conflict $F(2, 37) = 3.921$, $p = .029$, $\eta_p^2 = .175$, but was not significantly related to relational conflict $F(2, 37) = 3.006$, $p = .062$, $\eta_p^2 = .140$. Higher status conflict, in turn, was significantly related to less creativity, $F(1, 38) = 10.712$, $p = .002$, adjusted $R^2 = .198$ ($\beta = -.469$). Task conflict, process conflict, and relational conflict did not significantly predict creativity, however. Thus, we conducted a bootstrap analysis to determine whether the effect of power on creativity was mediated by status conflict. The 95% bias-corrected CI (with 5,000 bootstrap samples) excluded zero [−.5449, −.1148] indicating that status conflict mediated the effect of power on group creativity (see Figure 2). Therefore, groups with high power individuals were less creative in part because they engaged in more status conflict.

Did groups of high power individuals have worse task processes? As shown in Table 1, high power was significantly related to less task focus, $F(2, 37) = 7.304$, $p = .002$, $\eta_p^2 = .283$, less information sharing $F(2, 37) = 7.934$, $p = .001$, $\eta_p^2 = .300$ and less integrativeness $F(2, 37) = 4.077$, $p = .025$, $\eta_p^2 = .181$. Linear regression analyses revealed that task focus and information sharing, in turn, were significantly related to creativity $F(1, 38) = 15.292$, $p < .001$, adjusted $R^2 = .268$ ($\beta = .536$), and $F(1, 38) = 8.208$, $p = .007$, adjusted $R^2 = .156$ ($\beta = .421$), respectively. The relationship between integrativeness and creativity was not significant $F(1, 38) = 1.576$, $p = .217$. For task focus, the 95% bias-corrected CI (with 5,000 bootstrap samples) excluded zero [−.6286, −.0577], indicating that task focus mediated the effect of power. For information sharing, the 95% bias-corrected CIs also excluded zero [−.3628, −.0342]. Therefore, task focus and information sharing also independently mediated the effect of power on group creativity, in addition to status conflict (see Figure 2). When all three mediators were entered into the same model both status conflict and task focus simultaneously mediate the effects of power on creativity though information sharing does not (95% CIs for the three indirect effects simultaneously: status conflict [−.4002, −.0040], task focus [−.5407, −.0036], information sharing [−.2489, .0442]). When just status conflict and task focus are included in the same mediation model, both mediated the effects of power on creativity (95% CIs: status conflict [−.4351, −.0217,] and task focus [−.5611, −.0279]).

Did groups of high power individuals have less positive interactions? Groups of high power individuals conveyed less positive reinforcement $F(2, 37) = 7.477$, $p = .002$, $\eta_p^2 = .288$ (see Table 1). Power condition did not significantly influence positive affect however, $F(2, 37) = .694$, $p = .506$. Linear regression analyses revealed that positive affect and positive reinforcement were not significantly related to creativity, $F(1, 38) = .063$, $p = .804$ and $F(1, 38) = .108$, $p = .744$, respectively.

Path analysis. We conducted a path analysis to assess (a) whether the simultaneous regression model illustrated in Figure 2 fit our data well and (b) whether this simultaneous regression model was better than an alternative, sequential, regression model in which group conflict precedes worse group processes. We used manifest indicators rather than latent variables to mitigate concerns regarding the statistical power of tests associated with structural equation models with relatively small sample sizes (Aquino, McFerran, & Laven, 2011; Chin, 1998). We estimated a path model that included the three significant mediators (status conflict, task focus, and information sharing) and permitted the two process

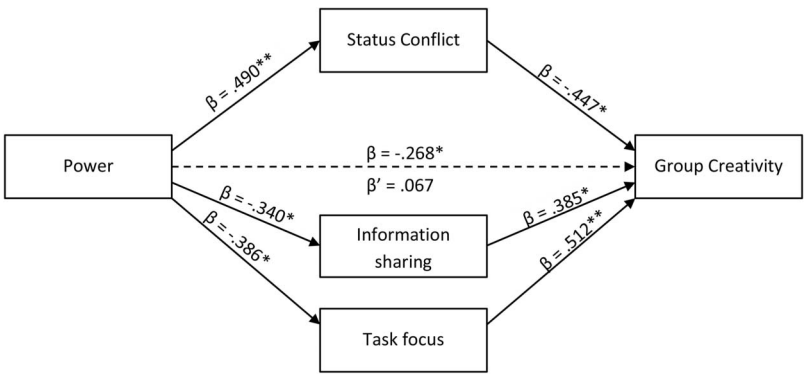

Figure 2. In Study 1A, the mediation model for the effects of power on group creativity through status conflict, information sharing, and task focus. Shown are standardized β coefficients. * $p < .05$, ** $p < .01$.

measures to covary as the associated error terms were correlated. The model fit the data well $\chi^2(2) = 1.786$, $p = .168$, comparative fit index (CFI) = .956, root mean square error of approximation (RMSEA) = .117.

To assess whether this simultaneous regression model fit our data better than a sequential model, we estimated a second path model that included the three mediators in sequence (status conflict preceding the two process measures). The model fit the data reasonably well $\chi^2(3) = 1.689$, $p = .167$, CFI = .942, RMSEA = .110. The Akaike Information Criterion (AIC) for the simultaneous regression model (AIC = 37.641) was similar to that of the sequential regression model (AIC = 37.387) suggesting both models fit our data well. Similar analyses confirmed that the simultaneous model was also a better fit for the data than the reverse sequential model (process measures preceding status conflict).

Summary. Groups comprised of high power individuals (i.e., individuals who had power in a prior context) were less creative than groups comprised of neutral or low power individuals (i.e., individuals who had neutral or low power in a prior context). Exploratory analyses found that power specifically reduced the novelty of groups' ideas. Moreover, power was highly disruptive to group processes: First, groups of high power individuals engaged in more status conflict when working together. Indeed, status conflict in particular mediated the detrimental effects of power on creativity. Consistent with prior research (e.g., Greer et al., 2011), groups of high power individuals also engaged in more task, process, and relationship conflict; however, those forms of conflict did not mediate the effect of power on creativity. Second, high power individuals were less focused on the task when working together, and they were less integrative and shared less information. Task focus and information sharing also mediated the effects of power on creativity. Finally, high power individuals gave each other less positive reinforcement when working together, though this did not mediate the effects on creativity.

It is interesting that the effects of power occurred primarily in the high power condition: the low power and control conditions did not differ on any variable, save the manipulation check. This is consistent with a host of prior studies that have also found stronger effects for possessing power than for lacking power (e.g., Anderson & Galinsky, 2006; Galinsky et al., 2003; Guinote, Willis, & Martellotta, 2010; Smith & Bargh, 2008). It suggests that while giving individuals high power might debilitate their ability to work with other high power individuals, giving individuals low power does not necessarily improve their collaborative performance above and beyond being in a neutral position.

Study 1B: Addressing the Effects of Power on Individual Creativity

We have argued that when high power individuals collaborate in groups, they will work together in less effective and more dysfunctional ways, which in turn will hamper performance. Therefore, our model focuses on how power disrupts group processes, which in turn, damages group performance. However, a possible alternative explanation for the findings in Study 1A is that groups of high power individuals were less creative because of individual-level cognitive effects as well. That is, the possession of high power in the tower-building task might have led participants to be less creative on subsequent tasks, regardless of whether they worked in groups or worked alone. Power might have simply led individuals to be less creative on a general level. Although prior research has shown that the possession of power actually increases, rather than decreases, individuals' creativity when they work alone (Galinsky et al., 2008; Gervais et al., 2013), it is still possible the specific creativity task we used allowed for different effects of power than the creativity tasks used in prior research.

To address this possibility in Study 1B we used a nearly identical design and procedure that was used in Study 1A, including the same power manipulation and creativity task. However, participants in Study 1B completed the creativity task alone rather than in groups. By using the same creativity task we could address whether the effects observed in Study 1A were because of individual-level cognitive effects of power on creativity.

Method

Participants. There were 116 participants (57 women, $M_{age} = 20.80$, $SD = 1.54$) from a large West Coast University who participated in the study for either course credit or cash payment ($15). All participants also had the opportunity to earn additional money, as described below.

Procedure. The laboratory procedure was nearly identical to that used in Study 1A. Participants completed the same online survey before the laboratory session that included measures ostensibly used in the laboratory power role assignments. Six participants were again scheduled for each laboratory session. To manipulate power, participants were split into pairs and asked to work on the tower-building task as a dyad. In some dyads, one participant was assigned to a high power role and the other to a low power role. In other dyads, both participants were assigned to the control condition. After manipulating power through the dyadic task, participants then completed a creativity task. However, in contrast to Study 1A, the creativity task was completed alone rather than in groups. Participants were assigned to individual cubicles and given 15 min to complete the creativity task alone. Further, the creativity task was not videotaped as there were no interactions between participants to observe during this task. The experimenter again clarified that performance would be judged solely on the creativity of their overall ideas.

Results

Age, race, and sex were not significantly related to power or creativity. Further, controlling for these variables did not significantly affect any of our results. Therefore, these variables were not considered further in the analyses below.

Manipulation check. Power condition had a significant effect on participants' self-reported power, $F(2, 111) = 52.632$, $p < .001$, $\eta_p^2 = .487$. Participants in the high power condition ($M = 5.84$, $SD = .79$) had higher self-reported power those in the control ($M = 4.67$, $SD = 1.31$) and low power conditions ($M = 3.05$, $SD = 1.35$), $p < .001$ and $p < .001$, respectively. Control participants also had higher self-reported power than low power participants ($p < .001$). At the notional group level, power condition had a significant effect on the average group self-reported power, $F(2, 39) = 52.047$, $p < .001$, $\eta_p^2 = .738$. Participants in the high power condition ($M = 5.84$, $SD = .37$) had higher self-reported power those in the control ($M = 4.67$, $SD = .89$) and low power

conditions ($M = 2.99$, $SD = .77$), $p < .001$ and $p < .001$, respectively. Average notional group scores for the control condition were also significantly higher than those for the low power condition ($p < .001$).

Did power increase creativity? The power manipulation had a significant effect on participants' creativity, $F(2, 111) = 4.988$, $p = .008$, $\eta_p^2 = .082$. Consistent with prior research, however, participants in the high power condition ($M = 1.90$, $SD = .58$) were *more* creative than those in the control condition ($M = 1.50$, $SD = .69$) and those in the low power condition ($M = 1.46$, $SD = .71$), $p = .008$ and $p = .005$, respectively. There was not a significant difference in creativity between those in the control and low power condition, $p = .801$. The 95% bias-corrected CIs (with 5,000 bootstrap samples) for the mean difference in participant creativity scores were: high power versus control conditions [.0986, .6706]; high power versus low power conditions [.1356, .7262]; and control versus low power conditions [−.3081, .3695].

Along an exploratory vein we again examined the novelty and usefulness of participants' ideas. Power had a significant effect on novelty $F(2, 111) = 5.484$, $p = .005$, $\eta_p^2 = .090$. Participants in the high power condition ($M = 1.93$, $SD = .71$) generated more novel ideas than those in both the control ($M = 1.51$, $SD = .78$) and low power conditions ($M = 1.41$, $SD = .71$), $p = .016$ and $p = .002$, respectively. The novelty of ideas generated by those in the control and lower power conditions did not differ, $p = .532$. Similar to Study 1A, participants' power did not affect the usefulness of their ideas, $F(2, 111) = 1.162$, $p = .317$. High power participants did not generate more useful ideas than others.

Summary. In contrast to Study 1A in which power reduced groups' creativity, Study 1B found that power *increased* individuals' creativity when they worked alone on a creativity task. This is suggestive that the findings of Study 1A were not because of individual-level cognitive effects. Power did not appear to decrease individuals' creativity in general; in fact, when working alone, power enhanced individuals' creativity. Instead, power appeared to damage group processes specifically, and the ways in which high power individuals worked with each other. In other words, high power individuals working together in groups were less creative than other groups despite the creative boost power provides individuals working alone. Exploratory analyses also found that power specifically boosted the novelty of participants' ideas, suggesting that power boosted divergent and innovative thinking when individuals work alone.

Study 2: Group Negotiation Among Executives

Study 2 extended beyond Study 1A in two important ways. First, we examined whether the effects observed in Study 1A generalize to individuals who have power in the real world. We assessed executives who worked for a large health care organization. Many of these executives held prominent positions in their medical facilities or as members of regional oversight committees, supervised numerous individuals with the ability to hire and fire, set salaries, and determine promotions. However, these executives also differed in their level of power. While some executives held roles such as Departmental Chief that afforded them power over hundreds of subordinates, others held much more specialized roles that afforded them much less power. We were thus able to examine whether groups of executives who had higher power in the organization would perform worse than groups of executives who held less power.

Second, we examined whether the effects of Study 1A would generalize to a different kind of group task, one that is also representative of the kinds of tasks groups of individuals with high power often must accomplish. Specifically, groups of individuals with high power often must come together and reach agreement on difficult decisions despite their opposing viewpoints—this is true of boards of directors, members of congress, or heads of state, for example. Therefore, we had groups of participants in Study 2 work on a negotiation task in which they role-played an organizational committee that must agree on which job candidate their company should hire. Each group member was assigned to advocate for a different candidate, and our key dependent variable was whether group members were able to overcome their differences of opinion and come to an agreement.

Participants completed their group task as part of a broader executive leadership program. By having all groups work on the same task at the same time, we also helped to control for an important potential confound. Within organizations, executives with different levels of power typically work on different kinds of problems. Those with more power tend to work on more important issues that have a broader impact on the organization compared to those with less power. Power can thus be confounded with the kind of problem on which groups work. We were able to avoid this confound by having all groups in Study 2 work on the same task.

The procedure in Study 2 was similar to that used in Study 1A except for the following differences: First, power was not experimentally manipulated across groups. Instead, groups were formed based on their power in the organization, with higher-power executives being grouped together and lower-power powerful executives being grouped together. Second, participants completed a negotiation task rather than the creativity task used in Study 1A. Third, participants completed the task in larger rooms where other groups also completed the same task. Finally, participants were given 30 min rather than 15 min to complete the group task.

Method

Participants. There were 158 executives (62 women; 75 White; $M_{age} = 40.6$, $SD = 5.14$) from a large health care company who participated in the study as part of an executive leadership program. All participants were Doctors of Medicine with several years' post-MD experience managing different practices or functional areas of the business.

Online survey. Several weeks before the experimental session, participants completed an online survey that included a measure of their power in the organization. We used an eight-item measure (adapted from Sherman, Lee, Cuddy, Renshon, Oveis, Gross, & Lerner, 2012) that comprised three submeasures: two items related to the total number of subordinates the participants managed ($\alpha = .981$), two items related to the number of participants' direct reports ($\alpha = .970$) and four items relating to their authority in making decisions that affect those they lead, such as the ability to promote or demote subordinates ($\alpha = .752$). Consistent with Sherman et al. (2012), the first two submeasures were each log-transformed to reduce skewness; all three submeasures were then standardized and averaged to create a composite measure ($\alpha = .700$). The composite scores of all the members of each

group were then averaged ($M = 0.03$, $SD = .73$, ranged from −1.43 to 1.44). Note that while Sherman et al. (2012) called their measure an index of leadership, it serves very well as an index of power, as having subordinates, direct reports, and the ability to promote or demote others are core features of power in organizations (Perrow, 1970; Pfeffer, 1981).

Allocation to group. Participants were randomly assigned to one of three hour-long sessions by the company. Within each session, participants were ranked according to their individual power in the organization. Initial group assignments within each session was made by allocating the four participants with the four highest power scores to the first group, the four participants ranked fifth through eighth highest power to the second group, and so on.[2] In total, participants comprised 42 groups, including 32 groups of four participants and 10 groups of three. Moderation analyses confirmed that group size did not moderate the effects of power on any other variable. In addition, including a dummy variable for group size did not significantly affect any of the results. Thus, we analyze all groups together.

Group negotiation task and performance measure. Groups role-played an organizational committee that was charged with selecting their company's next Chief Financial Officer (CFO; full task materials are available upon request). All group members were given information about four job candidates. The group's task was to reach agreement in 30 min on which candidate should be the next CFO (as well as who was the second, third, and fourth choice). To mimic conditions in which individuals have differences in opinion and different motivations, each of the four group members were also randomly assigned to advocate for a different candidate. The experimenter clarified that all members of the group should advocate for their own candidates as best they could as well as to try to reach agreement as a group on the final ranking of candidates.

In contrast to Study 1A in which groups' performance was measured by the creativity of their ideas, here their performance was measured by whether or not they reached agreement despite their differences in opinion. The dichotomous measure "agreement" was coded 1 if the group agreed on which candidate was their first, second, third, and last choice in the time available and 0 if they reached an impasse. Four of the videos ended before the end of the group's discussion and so it was not possible to code agreement for these groups.

Group process measures. As in Study 1A, videotapes of the group discussions were rated by two independent judges blind to the hypotheses and condition. The reliability of judges' ratings for each measure were assessed after 20% of the videos had been coded and any conflicts resolved before the rest of the videos were coded (interrater reliabilities were status conflict $r = .79$, task conflict $r = .85$, process conflict $r = .89$, relational conflict $r = .95$, information sharing $r = .97$, task focus $r = .88$, integrativeness $r = .93$, positive affect $r = .80$, and positive reinforcement $r = .89$).

We also wanted to rule out a possible alternative explanation for our findings. Namely, if we found that groups of high-power individuals reached an impasse more than other groups, it is possible that they did so simply because power leads to more aggressive and less conciliatory negotiation tactics. Prior research has shown that in negotiations, individuals with higher power (typically operationalized as having alternatives to the negotiation) are more likely to make first offers, make more extreme offers, give fewer concessions, and use threats (e.g., De Dreu, 1995; Magee, Galinsky, & Gruenfeld, 2007). We had two independent judges blind to condition and hypotheses code the number of concessions individuals made, and rated the degree to which the individual "was inflexible and rigid in her/his argument" on a 1 (*strongly disagree*) to 7 (*strongly agree*) scale. They also rated the extent to which individuals "pursued her/his goals aggressively" (on the same scale) and counted the number of threats made. The reliability of judges' ratings for each measure was high for all dimensions (number of concessions $r = .75$, inflexible $r = .76$, aggressive $r = .71$, $N = 42$). There was zero variance between the judges' ratings for the number of threats. The judges' scores for each item were, therefore, averaged together to create combined scores for each measure.

Individual performance measure. Along an exploratory vein, we also wanted to address the effects of power on individual performance. This would again address whether high power hinders group performance because it hinders individual cognitive abilities (similar to what we examined in Study 1B). In this task, strong individual performance means delivering credible, persuasive arguments to convince other group members to adopt their candidate or to agree on a final set of candidates. Therefore, two independent judges blind to condition rated the quality of each individual's performance during the group discussions. For each member of every group they rated the extent to which they agreed with the following statement "During the group task, to what extent did each member of the group exhibit credibility (knowledge, expertise)" using the scale 1 (*much less than others*) to 7 (*much more than others*). Reliability was high ($\alpha = .92$) and so scores were combined into an average measure of quality.

Results

Summary statistics for Study 2 are shown in Table 3. Individual power was not related to age $F(1, 155) = .706$, $p = .402$, adjusted $R^2 < 0.001$; sex $F(1, 155) = 1.324$, $p = .252$, $\eta_p^2 = .008$; or race $F(1, 155) = .108$, $p = .743$, $\eta_p^2 = .001$. Similarly at the group level, power was not related to average age $F(1, 40) = 1.023$, $p = .318$, adjusted $R^2 = 0.001$; the percentage of men in the group $F(1, 40) = 2.135$, $p = .152$, adjusted $R^2 = .027$; or the percentage of Whites in the group $F(1, 40) = .012$, $p = .912$, adjusted $R^2 < 0.001$. Moreover, controlling for these demographic variables did

[2] To control for the possibility that participants with higher power might know each other better than do participants with lower power (thus, confounding power with familiarity to other group members), these initial group assignments were then adjusted using demographic information the company provided including the group they had been assigned to for the duration of the leadership program (i.e., their POD), medical center (a proxy for their geographical location), and functional specialty (e.g., Medicine, Neurology, Pediatrics, etc.). The adjustments to the initial group allocation were made with the aim of minimizing the variance of power within each group by swapping members of groups with adjacently ranked power and using the following order of priorities: First no two members of the group should be from the same POD; second, no two members of the group should have the same functional specialism; and third, no two members of the group should be from the same geographic location. Both priorities (1) and (2) were achieved. Nine of the 42 groups had pairs of members from the same geographic but different functional specialism. Moderation analyses confirmed that shared geographic location did not moderate the effects of power on any other variable.

Table 3
Study 2 Descriptive Statistics—Group Level

	M	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Power	40.03	40.73													
2. Percentage male	40.61	40.23	−.23												
3. Average age	40.61	42.43	−.16	−.03											
4. Percentage White	40.47	40.25	−.02	−.05	−.32*										
5. Status conflict	42.31	41.07	−.46**	−.22	−.01	−.12									
6. Other conflict–task	44.52	41.40	−.54***	−.20	−.22	−.04	−.69***								
7. Other conflict–process	41.98	40.95	−.43**	−.20	−.08	−.17	−.54***	−.36*							
8. Other conflict–relational	41.95	41.08	−.40**	−.11	−.14	−.05	−.54***	−.65***	−.52***						
9. Task process–focus	43.21	40.84	−.41**	−.07	−.12	−.24	−.16	−.08	−.24	−.12					
10. Task process–information sharing	44.10	41.12	−.45**	−.10	−.36*	−.23	−.23	−.44**	−.27	−.28	−.21				
11. Task process–integrativeness	42.45	40.77	−.39*	−.10	−.21	−.02	−.29	−.54***	−.48**	−.50**	−.22	−.43**			
12. Positive interactions–positive affect	42.81	40.89	−.25	−.22	−.05	−.04	−.35*	−.41**	−.47**	−.47**	−.15	−.51**	−.59***		
13. Positive interactions–positive reinforcement	42.67	40.95	−.46**	−.30	−.17	−.05	−.45**	−.52***	−.63***	−.39*	−.12	−.53***	−.71***	−.76***	
14. Agreement[a]	40.71	40.46	−.36*	−.15	−.06	−.07	−.48**	−.46**	−.37*	−.21	−.57***	−.49**	−.26	−.21	−.24

Note. $N = 42$.
[a] Agreement coded 1 = yes, 0 = no.
* $p < .05$. ** $p < .01$. *** $p < .001$.

not significantly affect our results in any way. Therefore, we did not consider the effects of demographic characteristics of participants further.

Were groups comprised of high power executives less likely to reach agreement? As predicted, a logistic regression analysis revealed that power predicted whether or not groups reached agreement ($B = -1.303$, $SE = .625$, Wald $= 4.349$, $p = .037$). The 95% boot-strapped CI (5,000 bootstrap samples) for the coefficient B was [.164, 3.843]. For illustrative purposes and to compare the results with those from Study 1A, we tertiary-split the groups to compare the outcomes of groups with high power, moderate, and low power participants; this would be similar to high power, control, and low power groups in Study 1A. Power was significantly related to agreement $\chi^2(2, N = 38) = 5.052$, $p = .080$. Groups whose members were in the highest tertiary of power in the organization were less likely to reach agreement (46%, 5 out of 11 groups) than groups whose members possessed moderate power (79%, 11 out of 14 groups) and, than groups whose members had the lowest power (85%, 11 out of 13 groups), $p = .087$ and $p = .043$, respectively. Groups whose members possessed moderate power and groups whose members had the lowest power did not differ, $p = .686$ (see Figure 3).

Did groups of high power executives engage in more status conflict? Consistent with Study 1A, groups of high power executives exhibited higher levels of status conflict $F(1, 40) = 10.732$, $p = .002$, adjusted $R^2 = .192$ ($\beta = .460$). They also exhibited more task conflict $F(1, 40) = 16.030$, $p < .001$, adjusted $R^2 = .268$ ($B = .535$), process conflict $F(1, 40) = 8.839$, $p = .005$, adjusted $R^2 = .161$ ($\beta = .425$), and relational conflict $F(1, 40) = 7.786$, $p = .008$, adjusted $R^2 = .142$ ($\beta = .404$).

Status conflict predicted the likelihood of reaching agreement: logistic regression analyses predicting agreement revealed that the coefficient for status conflict was $B = -1.143$ (.438), Wald $=$ 6.803, $p = .009$. Task conflict ($B = -.1.027$ (.423), Wald $=$ 5.884, $p = .015$); and process conflict ($B = -.970$ (.457), Wald $= 4.500$, $p = .034$) were also negatively related to the likelihood of reaching agreement whereas relational conflict was not ($B = -.406$ (.324) Wald $= 1.567$, $p = .211$).

Thus, we conducted bootstrap analyses to determine whether the relation between power and agreement on the task was mediated

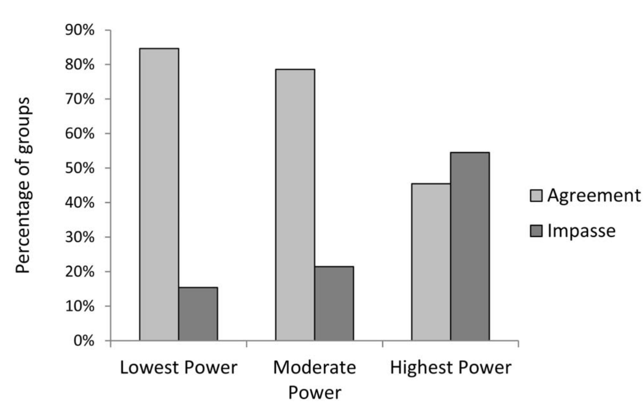

Figure 3. In Study 2, the percentage of groups who reached agreement, broken down by groups whose members' average power in the organization was in the highest, middle, and lowest tertiaries.

by status conflict, as well as task and process conflict. The 95% bias-corrected CIs (with 5,000 bootstrap samples) excluded zero for both status conflict [−2.2678, −.0402] and task conflict [−.3.2894, −.0530] but included zero for process conflict [−1.3078, .0934] indicating that both status conflict and task conflict independently mediated the effect of power on the likelihood of agreement (see Figure 4). Groups comprised of high power executives were less likely to reach agreement than other groups in part because they engaged in more status conflict and more task conflict.

Did groups of high power executives have worse task processes? Higher power was also related to being less task focused $F(1, 40) = 7.864$, $p = .008$, adjusted $R^2 = .143$ ($\beta = -.405$), sharing less information $F(1, 40) = 10.289$, $p = .003$, adjusted $R^2 = .185$ ($\beta = -.452$) and being less integrative $F(1, 40) = 7.165$, $p = .011$, adjusted $R^2 = .131$ ($\beta = -.390$).

Logistic regression analyses revealed that both task focus and information sharing were significantly positively related to the likelihood of reaching agreement: task focus $B = 1.978$ (.726) Wald = 7.424, $p = .006$; information sharing $B = 1.207$ (.472) Wald = 6.544, $p = .011$. The relationship between integrativeness and agreement in the task was not significant $B = .834$ (.546) Wald = 2.344, $p = .127$. The 95% bias-corrected CIs (with 5,000 bootstrap samples) excluded zero for both task focus [−8.7420, −.0963] and information sharing [−2.7765, −.0792] indicating that both process measures independently mediated the effect of power on agreement. Groups comprised of high power executives were less likely to reach agreement in part because they were less focused on the task and shared less information (see Figure 4). When all four mediators are entered into the same model, the three key mediators of status conflict, task focus and information sharing simultaneously mediated the effects of power on creativity (95% CIs for the three indirect effects: status conflict [−27.45, −3.67], task focus [−14.00, −1.16], information sharing [−20.77, −3.80]) but the indirect for task conflict did not (95% CI [−2.20, 15,75]). When just the three key mediators are entered into the same model they continue to simultaneously mediate the effects of power on creativity (95% CIs: status conflict [−14.38, −2.54], task focus [−11.55, −.84], and information sharing [−16.64, −2.85]).

Did groups comprised of high power executives have less positive group interactions? Groups comprised of high power executives expressed significantly less positive reinforcement $F(1, 40) = 10.574$, $p = .002$, adjusted $R^2 = .189$ ($\beta = -.457$). Power was again not significantly related to positive affect $F(1, 40) = 2.599$, $p = .115$. Logistic regression analyses revealed that neither positive affect nor positive reinforcement were significantly related to agreement $B = .566$ (.449) Wald = 1.591, $p = .207$ and $B = .647$ (.464) Wald = 1.941, $p = .163$.

Aggressive negotiation tactics. It did not appear to be the case that groups of high-power individuals reached agreements less often because their members used more aggressive negotiation tactics. Groups of high-power individuals did not make fewer concessions $B = .223$ ($SE = .221$) $t(40) = 1.010$, $p = .319$, were not more inflexible and rigid, $B = -.305$ ($SE = .217$) $t(40) = 1.407$, $p = .167$, did not negotiate more aggressively $B = -.199$ ($SE = .223$) $t(40) = -.890$, $p = .379$, or make more threats $B = -.055$ ($SE = .213$) $t(40) = -.258$, $p = .797$. Moreover, failing to reach agreement was not significantly related to making fewer concessions $B = -.161$ ($SE = .358$), Wald = .202, $p = .653$, inflexibility and rigidity, $B = .736$ ($SE = .430$), Wald = 2.929, $p = .087$, using a more aggressive negotiation style $B = .369$ ($SE = .369$), Wald = .771, $p = .380$, or using threats $B = 3.206$ ($SE = 6{,}334$), Wald = .000, $p = 1.000$.

Path analysis. As in Study 1A, we conducted a path analysis to assess (a) whether the simultaneous regression model illustrated in Figure 4 fit our data well and (b) whether this simultaneous regression model was better than an alternative, sequential regression model in which conflict preceded worse group processes. We estimated a path model that included the four significant mediators (status conflict, task conflict, task focus, and information sharing) and permitted the two conflict measures to covary as well as the two process measures to covary as the associated error terms were correlated. The model fit the data well $\chi^2(4) = 1.167$, $p = .323$, CFI = .992, RMSEA = .067.

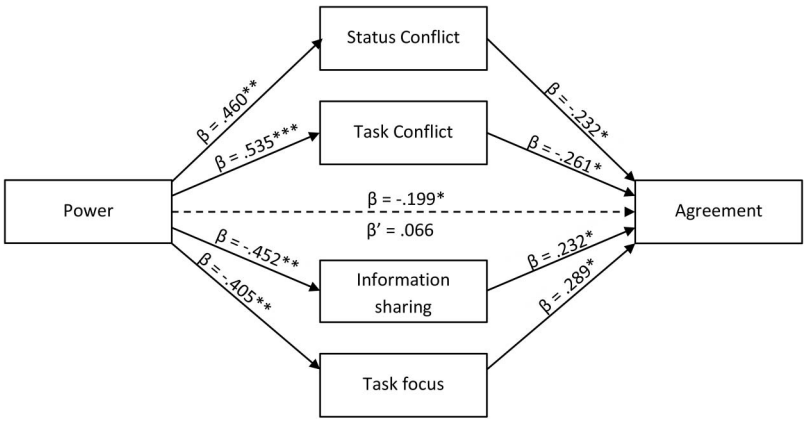

Figure 4. In Study 2, the mediation model for the effects of power on agreement through task conflict, status conflict, information sharing, and task focus. Shown are standardized β coefficients. * $p < .05$, ** $p < .01$, *** $p < .001$.

To assess whether this simultaneous regression model fit our data better than an alternative sequential model, we estimated a second path model that included the four mediators in sequence (the two conflict measures preceding the two process measures). The model did not fit the data well $\chi^2(4) = 5.779$, $p < .001$, CFI = .755, RMSEA = .341. The AIC for the simultaneous regression model (AIC = 38.666) was significantly better than that of the sequential regression model (AIC = 69.115) suggesting the simultaneous regression model was a better fit for the data. The simultaneous model was also a better fit for the data than the reverse sequential model (process measures preceding conflict measures).

Did high power groups perform worse because power undermined individual performance? Individual power was significantly *positively*, rather than negatively, related to the credibility and quality of individual arguments $F(1, 155) = 16.743$, $p < .001$, adjusted $R^2 = .092$. The average quality of arguments was also higher in groups comprised of high power participants $F(1, 40) = 12.755$, $p = .001$, adjusted $R^2 = .223$, but was not related to group performance (i.e., agreement) $B = -.503$ ($SE = .370$), Wald = 1.846, $p = .174$. Moreover, power remained marginally significantly related to agreement when controlling for average credibility of the group members' arguments $B = 1.235$ ($SE = .728$), Wald = 2.881, $p = .090$.

Summary. The findings of Study 2 were consistent with those from Study 1A and help generalize the results in important ways. Groups comprised of actual executives with more power in their organization were significantly less likely to reach agreement on a difficult negotiation task than groups comprised of executives with less power in that same organization. Moreover, consistent with the findings of Study 1A, groups comprised of high power executives experienced greater status conflict, which mediated the effects of power on agreement. These groups also experienced greater task, process and relational conflict compared to groups comprised of lower power executives and task conflict mediated the detrimental effects of power on agreement. Groups comprised of higher power executives were less focused on the task, less integrative and shared less information than groups comprised of executives with less power and again, both task focus and information sharing independently mediated the effects of power on agreement. Power was not related to positive affect but groups comprised of executives with more power did engage in less positive reinforcement than groups comprised of executives with less power. The positive reinforcement was not related to the likelihood of agreement however. Groups comprised of higher power executives did not perform worse because power undermined individual performance. To the contrary, the credibility and quality of high power executives' arguments was better, lending additional support to the hypothesis that worse group processes explain the detrimental effects of power on group performance. Finally, groups of higher power executives did not reach impasse more often because their members used more aggressive negotiation tactics, which helps rule out that alternative explanation.

Study 3: Experimental Manipulation of Group Negotiation in the Laboratory

The findings of Study 2 are of course correlational in nature and, although the findings held up after controlling for many potential confounds such as demographic variables, they are still subject to omitted variables bias and questions of causality. To increase the internal validity and establish causality, we thus returned to the laboratory in Study 3. Study 3 bridges the findings of Studies 1A and 2 by using the same controlled experimental methodology used in Study 1A and the same negotiation task used in Study 2. The procedure used in Study 3 was identical to that in Study 1A except for the following differences: First, eight participants rather than six were recruited for each session so that we could split participants into groups of four. Second, at the start of the laboratory session, before the power manipulation, participants were given 10 min to read the instructions for the group task and make notes. Third, as described above, the group task comprised the negotiation task used in Study 2 wherein members assumed roles on an organizational committee and had to choose their company's next CFO while being videotaped. Fourth, participants were given 20 min rather than 30 min to complete the negotiation.

Method

Participants. There were 319 participants (178 women, $M_{age} = 20.67$, $SD = 1.49$) from a large West Coast University who participated in the study for either class credit or pay ($15). As in Study 1A, all participants had the opportunity to earn additional money. Participants were scheduled eight at a time for each laboratory session. When fewer than eight participants attended a session and we could not form two groups of four, they were split up into at least two groups of three participants. In total 82 groups of participants (27 High Power, 30 control, 25 Low Power) including nine triads took part in the experiment. Moderation analyses confirmed that group size did not moderate the effects of power. Further, including a dummy variable for group size did not significantly affect any of the results. Thus the analyses combine all groups.

Group negotiation task and performance measure. Groups completed the same decision making task used in Study 2 but were given 20 min to complete the task. Groups were told that if they reached agreement they would have a better chance of winning a prize worth $100. Moreover, each participant was also told he or she would have a better chance of winning a gift certificate if his or her own preferred candidate was selected by the group. The experimenter again clarified that all members of the group should advocate for their own candidates as best they could as well as to try to reach agreement as a group on the final ranking of candidates. The same dichotomous measure of agreement used in Study 2 was used in Study 3.

Group process measures. As in Studies 1A and 2, videotapes of the group discussions were rated by two independent judges blind to the hypotheses and condition. The judges rated the same group process dimensions as in Studies 1A and 2. The reliability of coders' ratings for each measure were assessed after 20% of the videos had been coded and any conflicts resolved before the rest of the videos were coded (interrater reliabilities were status conflict $r = .94$, task conflict $r = .93$, process conflict $r = .84$, relational conflict $r = .92$, information sharing $r = .89$, task focus $r = .81$, integrativeness $r = .83$, positive affect $r = .88$, and positive reinforcement $r = .88$).

We also again wanted to rule out the alternative explanation groups of high-power individuals might reach an impasse more often simply because power lead to a more aggressive and less

conciliatory negotiation tactics. We had two independent judges blind to condition and hypotheses code the same dimensions as in Study 2. The reliability of judges' ratings for each measure was high for all dimensions (number of concessions $r = .85$, inflexible $r = .75$, aggressive $r = .78$, $N = 82$). There was again zero variance between the judges' ratings for the number of threats. The judges' scores for each item were, therefore, averaged together to create combined scores for each measure.

Individual performance measure. The quality of individuals' arguments was coded using the same methodology described in Study 2. Reliability was again high ($\alpha = .83$) and so scores were combined into an average measure of quality.

Manipulation and suspicion checks. At the end of the laboratory session, participants completed the same three-item measure of power ($\alpha = .902$) and two-item open-ended suspicion probe used in Studies 1A and 1B.

Results

Summary statistics for Study 3 are shown in Tables 4 and 5. None of the demographic variables of age, race, or sex was significantly related to power, agreement or the group process measures. Further, controlling for these variables did not significantly affect any of our results. Therefore, these variables were not considered further in the analyses below.

Manipulation check. The effect of the power manipulation on self-reported power was again significant $F(2, 309) = 111.067$, $p < .001$, $\eta_p^2 = .418$. Participants in the high power condition felt more powerful ($M = 5.78$, $SD = 1.08$) than those in the control condition ($M = 4.80$, $SD = 1.07$) and low power condition ($M = 3.03$, $SD = 1.74$), $p < .001$ and $p < .001$, respectively. The difference between the control and low power conditions was also significant ($p < .001$). At the group level, power condition was significantly related to group average self-reported power $F(2, 80) = 90.167$, $p < .001$, $\eta_p^2 = .698$. Average scores of high power condition groups ($M = 5.77$, $SD = .51$) were significantly higher than those of control condition groups ($M = 4.78$, $SD = .59$) and

Table 4
Means and SDs of Measures by Condition in Study 3

Measure	Low power	Control	High power
DV: Agreement[a]	88%[a]	80%[ab]	59%[b]
Status conflict	3.00[a] (1.50)	3.70[ab] (1.41)	4.11[b] (1.48)
Other conflict			
Task conflict	2.12[a] (1.05)	2.20[a] (1.19)	3.22[b] (1.45)
Process conflict	1.60[a] (1.00)	1.77[a] (1.14)	2.48[b] (1.34)
Relational conflict	1.80[a] (1.19)	1.90[a] (1.00)	2.70[b] (1.27)
Task processes			
Task focus	3.40[a] (.71)	3.27[ab] (.79)	2.85[b] (.95)
Information sharing	4.72[a] (.89)	4.47[a] (.97)	3.78[b] (.89)
Integrativeness	3.00[a] (.82)	2.80[a] (.66)	2.30[b] (1.10)
Positive interactions			
Positive affect	3.08[a] (.81)	3.03[a] (.67)	2.67[a] (1.07)
Positive reinforcement	3.36[a] (.76)	3.00[ab] (.64)	2.70[b] (.87)

Note. Means with different superscript letters are significantly different, $p < .05$ (t test). *SD*s are in brackets after the relevant means. $N = 82$ groups (25 high power, 30 control, and 27 low power).
[a] Figures for agreement are percentage of groups reaching agreement within that condition. Different superscript letters are significantly different, $p < .05$ (χ^2).

Table 5
Study 3 Descriptive Statistics—Group Level

	M	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Power[a]	22.02	20.80													
2. Percentage male	20.45	20.50	−.07												
3. Average age	20.69	20.86	−.10	−.13											
4. Percentage White	20.24	20.22	−.09	−.20	−.15										
5. Status conflict	23.62	21.51	−.29**	−.11	−.05	−.13									
6. Other conflict–task	22.51	21.33	−.34**	−.06	−.04	−.16	−.63***								
7. Other conflict–process	21.95	21.22	−.29**	−.19	−.03	−.05	−.43***	−.60***							
8. Other conflict–relational	22.13	21.21	−.30**	−.01	−.02	−.16	−.63***	−.64***	−.65***						
9. Task process–focus	23.17	20.84	−.26*	−.12	−.11	−.04	−.11	−.06	−.18	−.06					
10. Task process–information sharing	24.32	20.99	−.38***	−.08	−.12	−.01	−.22*	−.25*	−.18	−.28*	−.29**				
11. Task process–integrativeness	22.70	20.91	−.31**	−.09	−.11	−.12	−.33**	−.33**	−.34**	−.47***	−.09	−.42***			
12. Positive interactions–positive affect	23.06	21.00	−.58*	−.08	−.03	−.37	−.55*	−.63**	−.73**	−.84***	−.31	−.61*	−.70**		
13. Positive interactions–positive reinforcement	23.00	20.97	−.67**	−.14	−.17	−.49	−.64**	−.57*	−.67**	−.81***	−.25	−.57*	−.76**	−.90***	
14. Agreement[b]	20.76	20.43	−.27*	−.06	−.04	−.11	−.39***	−.36**	−.19	−.17	.35**	−.38***	−.03	−.04	−.15

Note. $N = 82$.
[a] Power coded 3 = high power, 2 = control, and 1 = low power. [b] Agreement coded 1 = yes, 0 = no.
* $p < .05$. ** $p < .01$. *** $p < .001$.

those of low power condition groups ($M = 3.03$, $SD = 1.03$), $p < .001$ and $p < .001$, respectively. The difference between average scores of groups in the control and low power conditions was also significant ($p < .001$).

Were groups of high power individuals less likely to reach agreement? As predicted, groups of participants in the high power condition were less likely to reach agreement (59%, or 16 out of 27 groups) than groups of control participants (80%, or 24 out of 30 groups) and groups of participants in the low power condition (88% or 22 out of 25 groups), $\chi^2(2, N = 82) = 6.309$, $p = .043$. The bootstrapped bias-corrected 95% CI (with 5,000 bootstrap samples) for the effect size η was [.021, .470]. Further, consistent with the findings in Study 1A, the effect of power was primarily driven by groups in the high power condition: their 59% agreement rate was substantially lower than that of groups in the control and low power conditions combined (84%, or 46 out of 55 groups total), $\chi^2(12, N = 82) = 5.836$, $p = .016$. In contrast, control and low power groups did not differ, $\chi^2(12, N = 55) = .638$, $p = .425$ (see Figure 5).

Did groups of high power individuals engage in more status conflict? As shown in Table 4, high power condition was related to more status conflict $F(2, 79) = 3.814$, $p = .026$, $\eta_p^2 = .088$. It was also related to more task conflict $F(2, 79) = 6.593$, $p = .002$, $\eta_p^2 = .143$, more process conflict $F(2, 79) = 4.274$, $p = .017$, $\eta_p^2 = .098$, more relational conflict $F(2, 79) = 4.996$, $p = .009$, $\eta_p^2 = .112$. Status conflict ($B = -.693$, $SE = .214$, Wald = 10.528, $p = .001$), in turn, was negatively related to the likelihood of reaching agreement. Task conflict was also negatively related to the likelihood of reaching agreement ($B = -.657$, $SE = .220$, Wald = 8.944, $p = .003$) whereas process conflict and relational conflict were not: $B = -.336$ (.202) Wald statistic = 2.758, $p = .097$ and $B = -.318$ (.206) Wald statistic = 2.370, $p = .124$, respectively.

We conducted bootstrap analyses to determine whether the effect of power condition on rates of agreement was mediated by more status conflict and more task conflict. The 95% bias-corrected CIs (with 5,000 bootstrap samples) excluded zero for both status conflict [−.9789, −.0630] and task conflict [−.7500, −.0582] indicating that both types of conflict mediated the effect of power on the likelihood of agreement. Consistent with Study 2, groups with high power individuals were less likely to reach agreement in part because they engaged in more status conflict and more task conflict (see Figure 6).

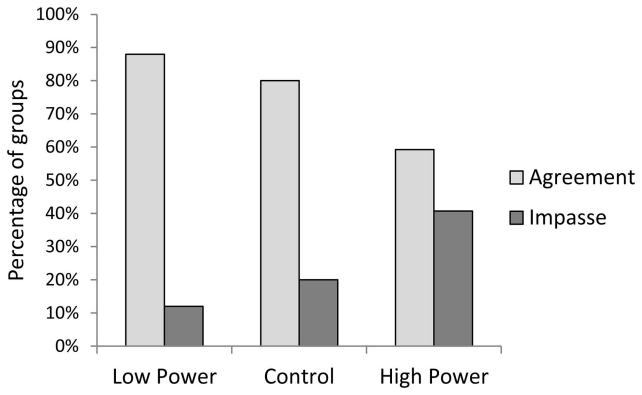

Figure 5. In Study 3, the percentage of groups who reached agreement, broken down by condition.

Did groups comprised of high power individuals have worse task processes? Again, as shown in Table 4, power condition led to less task focus $F(2, 79) = 3.215$, $p = .045$, $\eta_p^2 = .075$, less information sharing $F(2, 79) = 7.399$, $p = .001$, $\eta_p^2 = .158$, and less integrativeness $F(2, 37) = 4.542$, $p = .014$, $\eta_p^2 = .103$. Logistic regression analyses revealed that both task focus and information sharing were significantly positively related to the likelihood of reaching an agreement: task focus $B = 1.020$ (.342) Wald = 8.897, $p = .003$; information sharing $B = 1.092$ (.344) Wald = 10.085, $p = .001$. The relationship between integrativeness and agreement was not significant $B = .073$ (.283) Wald = .065, $p = .798$. The 95% bias-corrected CIs (with 5,000 bootstrap samples) excluded zero for both task focus [−.7286, −.0298] and information sharing [−.9699, −.1461] indicating that both process measures independently mediated the effect of power on agreement. Consistent with Study 2, and as shown in Figure 6, groups comprised of high power individuals were less likely to reach an agreement in part because they were less focused on the task and shared less information than did other groups.

When all four mediators were entered into the same model, the three key mediators of status conflict, task focus and information sharing simultaneously mediated the effects of power on agreement (95% CIs for the indirect effects: status conflict: [−1.4018, −.0204], task focus [−1.0442, −.0436], information sharing [−1.3781, −.0492]) whereas task conflict did not (95% CI: [−1.0185, .3145]). The three key mediators continued to mediate the effects of power on agreement when task focus was removed from the model (95% CIs for the three indirect effects simultaneously: status conflict [−1.5017, −.3500], task focus [−2,2164, −.4378], and information sharing [−2.0371, −.1551]).

Did power reduce positive group interactions? Groups of high power individuals conveyed significantly less positive reinforcement $F(2, 79) = 4.872$, $p = .010$, $\eta_p^2 = .110$. Power was not significantly related to positive affect $F(2, 79) = 1.850$, $p = .164$ (see Table 4). Logistic regression analyses revealed that neither positive affect nor positive reinforcement were significantly related to the likelihood of reaching an agreement $B = .406$ (.305) Wald statistic = 1.773, $p = .183$ and $B = .349$ (.333) Wald Statistic = 1.103, $p = .294$.

We again conducted a path analysis to assess (a) whether the simultaneous regression model illustrated in Figure 6 fit our data well and (b) whether this simultaneous regression model was better than the alternative sequential regression model in which conflict preceded worse group processes. We estimated a path model which included the four significant mediators (status conflict, task conflict, task focus and information sharing) and permitted the two conflict measures to covary and the two process measures to covary as the associated error terms were correlated. The model fit the data well $\chi^2(4) = 1.743$, $p = .137$, CFI = .971, RMSEA = .096.

To assess whether this simultaneous regression model fit our data better than an alternative sequential model, we estimated a second path model, which included the four mediators in sequence (the two conflict measures preceding the two process measures). The model did not fit the data well $\chi^2(4) = 7.382$, $p < .001$, CFI = .749, RMSEA = .281. The AIC for the simultaneous regression model (AIC = 40.971) was significantly better than that of the

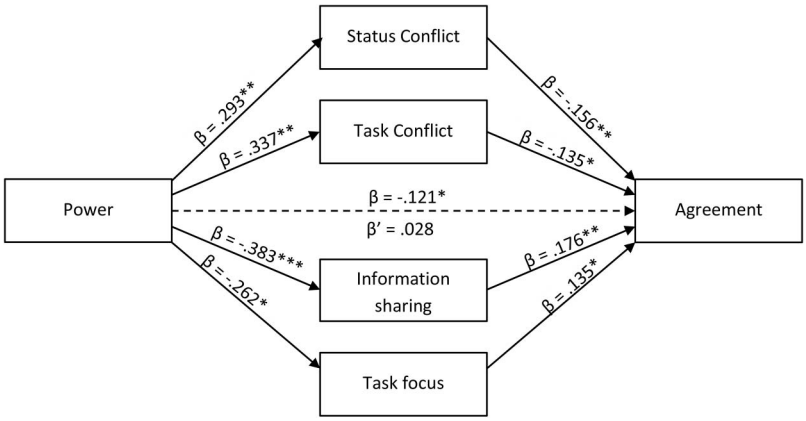

Figure 6. In Study 3, the mediation model for the effects of power on agreement through task conflict, status conflict, information sharing, and task focus. Shown are standardized β coefficients. * $p < .05$, ** $p < .01$, *** $p < .001$.

sequential regression model (AIC = 63.528) suggesting the simultaneous regression model was a better fit for the data. Consistent with prior studies the simultaneous model was also a better fit for the data than the reverse sequential model (process measures preceding conflict measures).

Did high power groups perform worse because power undermined individual performance? In contrast to the findings of Study 2, individual power condition was not significantly related to the quality of individual arguments $F(2, 314) = .287$, $p = .751$, $\eta_p^2 = .002$. At the group level, power condition was also not significantly related to the average quality of group members' arguments $F(2, 79) = .306$, $p = .737$, $\eta_p^2 = .008$, and the quality of arguments was again not significantly related to agreement $B = .205$ ($SE = .473$), Wald = .189, $p = .664$. Moreover, power remained significantly related to agreement when controlling for average credibility of the group members' arguments $B = .860$ ($SE = .362$), Wald = 5.653, $p = .017$. Consistent with the findings of Study 2, individual performance did not explain the detrimental effects of power on group performance in Study 3.

Aggressive negotiation tactics. It again did not appear to be the case that groups of high-power individuals reached agreements less often because their members used more aggressive negotiation tactics. Groups of high-power individuals did not make fewer concessions $F(2, 79) = 1.605$, $p = .207$, were not more inflexible and rigid, $F(2, 79) = 1.261$, $p = .289$, did not negotiate more aggressively $F(2, 79) = 1.832$, $p = .167$, or make more threats $F(2, 79) = 1.144$, $p = .324$. Moreover, failing to reach agreement was not significantly related to making fewer concessions $B = .020$ ($SE = .261$), Wald = .006, $p = .938$, inflexibility and rigidity, $B = -.453$ ($SE = .270$), Wald = 2.814, $p = .093$, using a more aggressive negotiation style $B = -.298$ ($SE = .268$), Wald = 1.233, $p = .267$, or using threats $B = 2.218$ ($SE = 4{,}439$), Wald = .000, $p = 1.000$.

Summary. Groups of individuals who had been given power in a prior task were less likely to reach agreement on a decision in which they had opposing viewpoints than were groups of neutral or low power individuals. The experimental methodology of Study 3 helps establish causality and rule out alternative explanations for the findings of Study 2. Furthermore, consistent with Studies 1A and 2, Study 3 found groups of high power individuals experienced greater status conflict than groups of neutral or low power individuals. Groups of high power individuals also experienced greater task and process conflict (consistent with Studies 1A and 2) as well as greater relational conflict. Status conflict again mediated the detrimental effects of power on agreement, as did task conflict in this study. Groups of high power individuals were less focused on the task, less integrative and shared less information than other groups and again, task focus and information sharing mediated the effects of power on agreement. Power was not related to positive affect but groups comprised of high power individuals did engage in less positive reinforcement than other groups. Differences in positive interactions were again not related to agreement in the task however. The quality of individual arguments did not differ between groups of high power individuals versus other groups lending additional support to the hypothesis that it is worse group processes rather than individual performance decrements explain the detrimental effect of power on group performance. Finally, as in Study 2, groups of high power individuals did not fail to reach agreement because their members used more aggressive negotiation tactics.

Study 4: The Moderating Role of Coordination

The primary aim of Study 4 was to examine boundary conditions for the effects we have observed thus far. In our prior studies, groups of high power individuals performed worse than other groups because of their more dysfunctional *group processes*: they engaged in more status conflict and shared information less effectively, for example. These findings suggest that the damaging effects of power on group performance will be particularly pronounced for tasks that require higher levels of coordination among group members—for example, tasks in which group members must interact a great deal with each other, build from and integrate each other's input into their own work, synchronize their individual activities, and agree upon joint plans and strategies (Kozlowski & Bell, 2003; McGrath, 1964; Steiner, 1972). In contrast, the possession of power might not damage group performance for tasks that require less intermember coordination, such as ones in

which members work individually and aggregate their work ex post (Hill, 1982). In fact, groups of high power individuals might outperform other groups for many tasks that require less coordination, given that possessing power can boost task-focus and goal-orientation (Guinote, 2007; Whitson et al., 2013). We investigated this idea in Study 4 by testing whether the effects of power on group performance are moderated by the type of task on which groups work and the level of coordination the task requires.

To address this first aim, we had groups complete a series of three tasks, one of which required more coordination (similar to the tasks in Studies 1A, 2, and 3), and two of which required less coordination. We used a repeated-measures design in which groups completed multiple tasks for two reasons. First, we wanted to examine whether the same groups of high power individuals who were less effective on *high-coordination* tasks would be more effective on *low-coordination* tasks. In other words, the relative effectiveness of groups of high power individuals can fluctuate from one task to another. Second, using a repeated-measures design would help boost statistical power, as compared with a between-measures design that would split groups into different conditions involving different tasks.

For the *low-coordination* tasks we used two "unusual uses" tasks, one that asked group members to generate ideas for using a cardboard box (e.g., Choi & Thompson, 2005; Hildreth, Moore, & Blader, 2014), and one that asked members to generate ideas for using a brick (e.g., Guilford, 1967). Group performance was measured by aggregating members' individual work, similar to many production teams (e.g., Hill, 1982; Lamm & Trommsdorff, 1973; Marquart, 1955; Shaw, 1932). For the *high-coordination* task, we asked groups to agree on a single most creative idea for using a cardboard box. That is, building from their abovementioned task in which they each generated creative uses for a cardboard box, we then asked them to work together and select their single most creative idea. We expected that groups of high power individuals would perform better than other groups on the *low-coordination* tasks but worse on the *high-coordination* task.

A second aim was to address an alternative explanation for our previous findings. Namely, it is possible that groups of high power individuals performed worse because their members worked less hard and contributed less overall. Prior research suggests that power can sometimes lead to less effortful cognitive processing (Keltner et al., 2003), and that low effort (loafing) leads to group performance deficits (Latané, Williams, & Harkins, 1979; Steiner, 1972). However, given that power leads to heightened task-focus and goal-orientation (Guinote, 2007; Whitson et al., 2013), we do not believe groups of high power individuals worked less hard than other groups.

To address this issue, we had groups work on a final, fourth task that assesses work ethic and persistence: a series of anagrams that become increasingly difficult, including one that is unsolvable. Many prior studies have used this task to gauge work ethic and persistence in the face of obstacles (e.g., Choi & Thompson, 2005; Ciarocco, Sommer, & Baumeister, 2001; Eisenberger & Shank, 1985; Segerstrom & Nes, 2007). The unsolvable nature of the task allows for a cleaner measure of persistence, independent of actual ability; groups that spend longer on the task can be said to have persisted longer and worked harder. We expected that groups of high power individuals would persist longer on the unsolvable anagrams task, given the benefits of power for task-focus and goal-orientation.

Using these tasks also helped accomplish a third aim. In our prior studies, we selected tasks based on their realism and proximity to actual tasks that groups of leaders or others might perform in organizational contexts. However, they were not tasks commonly used in the literature. The tasks we used in Study 4 have been used extensively in the research literature.

Method

Participants. There were 175 participants (95 women, M_{age} = 20.59, SD = 1.45) from a large West Coast University who participated in the study for either class credit or cash payment ($15). All participants had the opportunity to earn additional money as outlined below. Participants were assigned to 60 groups (30 High Power, 30 Low Power) including 55 three-person groups and 5 dyads.[3]

Procedure. The procedure was similar to the design used in Study 1A. As in Study 1A, after manipulating power via the tower-building task, participants were assigned to groups of three (all participants from the same power condition) and taken to separate rooms to complete their group tasks. However, there were two key differences here: (a) participants completed four focal group tasks rather than just one focal task. For each creativity task, participants were told that the top performing groups would receive $100 prizes. (b) Participants were randomly assigned to only two power conditions, high power and low power. Our previous studies had already compared the effects of high- and low power to control conditions, and by splitting participants among two power conditions rather than three, we were able to further increase statistical power.

For the group tasks, the order of the cardboard box and brick tasks was counterbalanced. However, task order did not moderate the effects of power and, therefore, will not be discussed further. The unsolvable anagram task was always completed last, so that we could assess whether groups persisted on a difficult (impossible) task even after they had already expended considerable effort on prior tasks.

Low-coordination tasks. Participants completed two versions of the unusual uses task, one that involved generating uses for a cardboard box and the other generating uses for a brick. For each task, participants received the complete instructions, blank paper, and were prompted to spend a few minutes jotting down their ideas (Choi & Thompson, 2005; Guilford, 1967; Paulus & Yang, 2000; Torrance, 1968). For the cardboard box task, participants were told that their group would be judged on the *creativity* of the ideas they generated (emphasis in the stimuli). For the brick task, participants were told that they would be judged simply on

[3] In Study 4, three people voluntarily withdrew from the study early and consequently we asked another two to leave too. In one session a female subject withdrew immediately after the tower-building task because of illness but before the first group task, which meant the three-person group she has been assigned to became a dyad. Two male subjects in two other sessions withdrew before the first tower-building task but after providing consent without providing reasons. We withdrew their assigned tower-building partners at the same time and continued running the sessions with four subjects in two dyads per session. No data was collected from the subjects who withdrew or were withdrawn.

the *number* of ideas they come up with (emphasis in the stimuli). These different performance criteria allowed us to examine whether high power benefits different forms of generativity—that is, whether groups of high power would perform better on tasks with different creativity goals. For both tasks, it was made clear to participants that the aggregate of their individual work comprised their group's overall success (Shaw, 1932).

For the cardboard box task, two independent judges blind to condition and hypotheses rated the creativity of ideas in the exact way that was described to participants. The ideas were presented to coders in random order, not in order of condition. Judges' ratings were reliable ($r = .76$, $\alpha = .86$), and thus, averaged together. For the brick task, our dependent measure was also measured exactly as described to the participants: by the simple total number of ideas generated. The distribution of the number of ideas was leptokurtic ($\gamma_2 = 3.76$) and positively skewed ($\gamma_1 = 1.50$) and so we log-transformed the number of ideas before running the analyses (Fox, 1997).

High-coordination task. Building from the cardboard box task described above, groups were given 10 min to choose one single most creative idea for a cardboard box together. The instructions stated that they would be judged solely on the creativity of that one idea they agreed upon as a group. Groups were given one piece of paper with three lines on which to write their group's most creative idea. Therefore, this task required much coordination among group members, including sharing their own ideas, listening to others' input, and reaching consensus as a group on the best idea. The creativity of this idea was rated by the same two independent judges who rated the earlier ideas for the cardboard box, who were blind to condition and hypotheses.

Anagram task. The anagram task involved four anagrams of increasing levels of difficulty, the last one being unsolvable, and participants were instructed to come up with one solution for each (Ciarocco et al., 2001; Eisenberger & Shank, 1985). The instructions stated that participants could spend as little or as much time on this task as they liked and to let the experimenter know when they wanted to stop. The instructions also indicated that there would be no prize for this task. There was sufficient experimental time for groups to assume they could spend at least 15–20 min on the task. However, the experimenter stopped any groups still working on the task after 12 min to provide time for manipulation and suspicion checks and a full debrief.

As in prior work, our dependent measure was simply the time the group spent on the task (e.g., Ciarocco et al., 2001; Eisenberger & Shank, 1985), $M = 551$ s, $SD = 165$ s. This variable was right censored at 12 min and 16 of the 60 groups were still working on the task when the experimenter said stop. Therefore, we used a Tobit regression analysis (Long, 1997; Tobin, 1958) a type of regression model that treats responses at the maximum (12 min) as censored and, therefore, yields consistent results for this type of data where ordinary least squares regression would not (Amemiya, 1973). We also coded the number of anagrams the group correctly identified among those that were solvable, $M = 1.28$, $SD = .69$. Although the unsolvable anagrams allows for a relatively clean measure of group persistence independent of group ability, we wanted to rule out the possibility that groups of high power individuals spent longer time on the task simply because they were worse at the solvable anagrams.

Results

Summary statistics for Study 4 are shown in Table 6. Neither age nor sex of group members was significantly related to power condition or any dependent variable. The percentage of White group members unexpectedly predicted the creativity of ideas in the cardboard box task, but this finding did not hold across any other task or emerge in any of our prior studies, and controlling for all demographic variables did not significantly affect any of our results. Therefore demographic variables were not considered further in the analyses below.

Manipulation check. Participants in the high power condition reported feeling more powerful ($M = 5.21$, $SD = 1.08$) than those in the low power condition ($M = 4.35$, $SD = 1.35$) $t(173) = 4.674$, $p < .001$, $d = .71$. At the group level, average group self-reported power in the high power condition ($M = 5.23$, $SD = .59$) was significantly higher than that in the low power condition ($M = 4.35$, $SD = .78$) $t(58) = 4.916$, $p < .001$, $d = 1.27$.

Did task type moderate the effects of power on group performance? To test whether the effect of power on group performance was moderated by task type—specifically the level of

Table 6
Study 4 Descriptive Statistics—Group Level

	M	*SD*	1	2	3	4	5	6	7	8
1. Power[a]	550.50	550.50								
2. Male group dummy	550.47	550.50	−.00							
3. Average age	520.59	550.81	−.10	−.08						
4. Percentage White	550.22	550.25	−.08	−.32*	−.27*					
Low-coordination tasks										
5. Cardboard box task–creativity of ideas	552.54	550.53	−.25+	−.02	−.26*	−.11				
6. Brick task–logged number of ideas	554.08	550.40	−.02	−.06	−.19	−.17	−.32*			
High-coordination task										
7. Cardboard box task–creativity of ideas	553.02	550.89	−.32*	−.12	−.08	−.29*	−.12	−.26*		
Unsolvable anagrams task										
8. Number of anagrams solved	551.28	550.69	−.12	−.00	−.01	−.06	−.27*	−.19	−.02	
9. Time spend on task in seconds	550.95	165.35	−.28*	−.09	−.19	−.20	−.18	−.18	−.02	−.17

Note. $N = 60$.
[a] Power coded 1 = high power, 0 = low power.
+ $p < .10$. * $p < .05$.

coordination required in the task—we z-scored groups' performance across all three creativity tasks and combined groups' z-scores in the two *low-coordination* tasks to compare with those groups' z-scores in the *high-coordination* task. A two-way 2 (power condition: high or low) × 2 (coordination: high or low) found that the effects of power on group performance depended on task type, $F(1, 58) = 10.261$, $p = .002$, $\eta_p^2 = .15$. For the *high-coordination* task, groups of high power individuals performed worse than groups of low power individuals, $t(58) = -2.574$, $p = .013$, $d = -.66$. The boot-strapped bias-corrected 95% CI (with 5,000 bootstrap samples) for the mean difference in z-scored group performance scores between the high power versus low power conditions was [−1.0833, −.1924]. For *low-coordination* tasks, groups of high power individuals performed no better or worse than groups of low power individuals, $t(58) = 1.119$, *ns,* the boot-strapped 95% CI for the mean difference in z-scored group performance scores between the high power versus low power conditions was [−.1491, .6369]. In fact, examining the effects of power on each of the two low-coordination tasks separately found that groups of high power individuals generated *more* creative ideas in the cardboard box task ($M = 2.68$, $SD = .87$), than did groups of low power individuals ($M = 2.39$, $SD = .87$), $t(58) = 1.971$, $p = .053$, $d = .34$. The boot-strapped 95% CI for the mean difference in z-scored group performance scores between the high power versus low power conditions was [.0059, .9914]. However, power condition was not significantly related to the log-transformed number of ideas that groups came up with for uses of a brick, $t(58) = -.113$, *ns*. The boot-strapped 95% CI for the mean difference in z-scored group performance scores between the high power versus low power conditions was [−.5237, .4578]. Therefore, it appears that groups of high power individuals performed even *better* in the cardboard box task. For illustrative purposes, the raw means for each task are presented in Figure 7.

Did groups of high power individuals persist longer on the anagrams task? Groups of high power individuals spent more time on the unsolvable anagrams task ($M = 597$ s, $SD = 223$) than did groups of low power individuals ($M = 505$ s, $SD = 157$), $t(58) = 2.21$, $p = .031$, $d = .057$. The boot-strapped 95% CI for the mean difference in group performance scores between the high power versus low power conditions was [8.14, 173.02]. Power condition was not significantly related to the number of solvable anagrams solved $\chi^2(2, N = 60) = 1.93$, *ns.* The boot-strapped 95% CI for the mean difference in group performance scores between the high power versus low power conditions was [.001, .431]. Therefore, the effect of power on time spent was not simply because of differences in ability. Groups of high power individuals simply persisted longer than groups of low power individuals.

Summary. Consistent with hypotheses, the effects of power on group performance depended on the task and the level of coordination required among group members. In tasks that required less coordination among group members, groups of high power individuals performed better than groups of low power individuals. However, as in our prior studies, groups of high power individuals performed worse than groups of low power individuals on a task that required coordination among group members—specifically one in which they were asked to agree on the most creative idea for a cardboard box. This latter finding is particularly striking, given that groups of high power individuals generated more creative ideas for a cardboard box when their members were not coordinating, and they brought these ideas to this task in which they were asked to coordinate and agree on the most creative idea for a cardboard box. Therefore, it again suggests that groups of high power individuals were less effective when forced to coordinate, despite the advantages they brought to the table. Furthermore, the benefits of coordination appear to be enjoyed by the powerless alone.

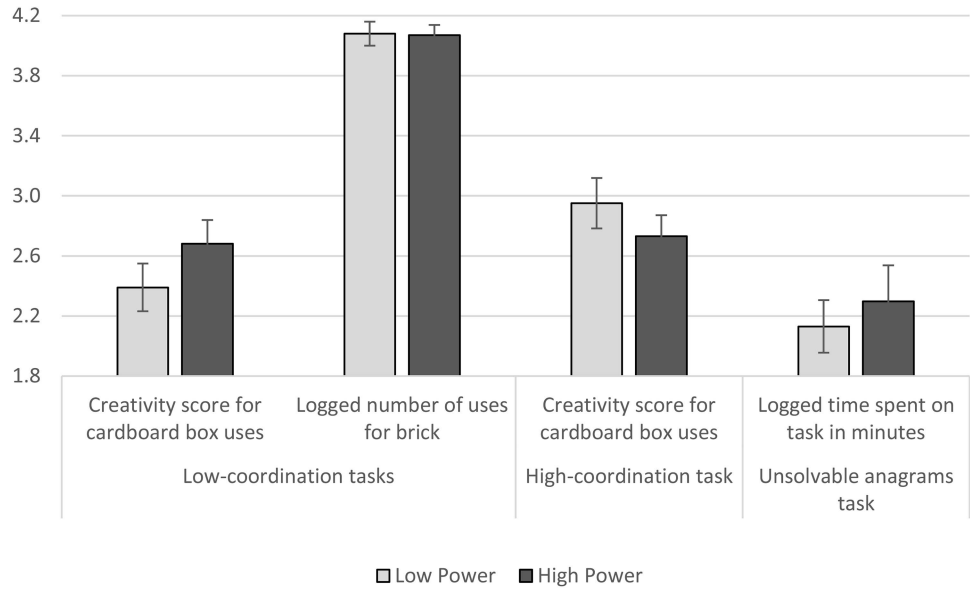

Figure 7. In Study 4, the group scores across four tasks, broken down by condition.

Also consistent with hypotheses, we found that groups of high power individuals spent longer on a task that was extremely challenging, and in fact impossible to complete, suggesting they persevered in the face of difficulties more than did groups of low power individuals. This finding helps rule out an alternative explanation for our previous results, namely that group of high power individuals performed worse simply because they worked less hard.

General Discussion

Summary of Findings

A driving question motivating the current research was how the possession of power affects leaders' ability to work with other leaders. To address this question we examined high power individuals when they work together as a group. In four studies we found that groups of high power individuals (i.e., individuals who had high power in a previous task or in their organization) performed worse than other groups. Groups of high power individuals were less creative (Studies 1A and 4) and less likely to agree on a difficult decision (Studies 2 and 3). The effects of power were consistent regardless of whether power was manipulated experimentally (Studies 1A, 3, and 4) or measured naturalistically in a field setting (Study 2).

The deleterious effects of individuals' power on group performance stemmed from group interaction processes, and did not appear to stem from individual-level cognitive effects. That is, power hampered individuals' ability to work with others, but it did not appear to hinder their ability to think effectively. We found in Studies 1A, 2, and 3 that groups comprised of high power individuals performed worse because they experienced greater levels of status conflict and used worse group processes. Specifically, groups comprised of high power individuals not only fought over status more but were less focused on the task and shared less information with each other. The detrimental effect of power on group performance was mediated by the relatively higher levels of status conflict, and lower levels of task focus and information sharing that members of these groups experienced compared with members of other groups.

In contrast, the possession of power did not appear to damage individuals' creativity when they worked alone (Study 1B) or on group tasks that required less coordination (Study 4) and did not cause them to generate weaker arguments to support their case in the group negotiations (Studies 2 and 3). In fact, high power individuals were *more* creative when they worked alone (Study 1B) or worked on a task that required less intermember coordination (Study 4), and they offered *more* credible arguments in one of the negotiation studies (Study 2). These results are consistent with prior work, which has shown that power can provide performance benefits when individuals work alone or on independent tasks that require less coordination (e.g., Guinote, 2007; Magee & Galinsky, 2008; Whitson et al., 2013). High power individuals also appeared more motivated to solve a difficult (in fact impossible) task, despite there being no extrinsic reward for completing the task (Study 4). Taken together, our findings suggest that groups of high power individuals will tend perform worse when a high level of coordination is required, but will perform better when a low level of coordination is required.

Implications

The current research helps us understand the behavior, performance—and perhaps most important, the failings—of those in power. Specifically, it can help explain why groups of high power individuals fail so often when they work together in collaborative efforts. Recent years have seen a ground swell of media attention and criticism of the performance of groups of leaders in the political and corporate spheres. Politicians are condemned for their inability to work together, to bridge across ideological lines, pass a budget, or agree on a bill (or any policy issue, really). Boards of directors are criticized for their failure to hold CEOs accountable for their performance or for failing to place limits on their compensation. While the possession and experience of power can make individuals more capable than others on individual tasks, that same power appears to undermine their ability to get along and work with each other on collaborative tasks. Interaction among the powerful is vulnerable to conflict and miscommunication that undermines their collective performance. Interventions to mitigate these risks are critical given the nature of the decisions these groups make and the impact those decisions have for wider society.

The present research identifies a number of mechanisms for the detrimental effects power can have on group performance. And, perhaps more importantly, identifying these mechanisms enables us to target where intervention strategies might be deployed to improve these groups' performance. For example, the higher levels of status conflict experienced by groups of high power individuals suggest that opportunities for mutual recognition and voicing of opinions should be identified so as to reduce the potential for status threat and conflict to arise. Formal information-sharing strategies might be implemented so that members of these groups are cognizant of all of the relevant information before making decisions thus mitigating the risk that relevant information is not shared. Structuring meeting time and formalizing decision processes may help these groups focus more on the task at hand than on other matters.

The current research contributes to the existing theoretical literature on the social psychology of power in several important ways. Though recent years have seen an explosion in the amount of research on the social psychology of power, prior research has focused heavily on the effects of power on the individual or within hierarchical contexts in which the powerful interact with the powerless. Very little social psychological research to date has examined interactions between individuals who possess power. The studies presented here begin to fill this lacuna in the literature. Critically, our findings suggest that simply extending the extant literature on the individual psychology of power to that of the group would be greatly mistaken. Groups comprised of high power individuals are not simply the sum of their (more capable) parts; indeed, far from it: groups of powerful individuals underperform relative to other groups when they are forced to coordinate with each other—precisely, it would seem, because of the members' individual power.

Strengths, Limitations, and Future Directions

There were a number of important strengths to the data. First, in examining groups working together, we used laboratory experimental as well as field designs; this allowed us to not only infer the causal effects of power but also assess the generalizability of the findings to individuals who possess power in the real world.

Second, we collected objective indices of performance such as independently rated individual and group creativity scores, and independently verified agreement outcomes. This removes the possibility that groups might have simply misreported their performance outcomes. Third, we collected video data of group discussions and had raters blind to condition and performance outcome rate the videos for process measures. This mitigates issues relating to the distorting effect of group attribution error on self-report measures (e.g., Allison & Messick, 1987).

While the current data had a number of strengths, there were of course limitations as well that should be addressed in future studies. First, future research should examine a wider range of tasks. For example, does power lead groups to make suboptimal decisions, fail to maximize joint gain in an integrative bargaining context, or generate less accurate solutions to problems? Although one could imagine the debilitating effects of status conflict and less effective information exchange would generalize to other contexts as well, this requires empirical assessment. Moreover, it is important to continue examining whether coordination moderates the effect of power on group performance.

Second, in the current studies participants came from the same subject pool (and thus, same school environment) or the work same organization, and might have felt as though they ultimately stemmed from the same ingroup. The contexts we studied were thus akin to contexts such as boards of directors or White House administrations where the individuals all fall within the same superordinate group. It is important to examine whether the same effects would emerge when powerful individuals who are part of different outgroups must work together. This would be similar to a meeting between heads of state or CEOs of different organizations, for example. It is possible that the deleterious effects of power on group performance would be exacerbated, given the lack of cohesion and collaboration that typically arises between members of different outgroups. However, it is also possible that because the powerholders of such groups occupy distinct status hierarchies (Frank, 1985), less status conflict would emerge and thus fewer problems would arise.

Third, it should be noted that this research was conducted on participants working or studying in the United States and, therefore, acclimatized to U.S. work habits and norms. It is important to test whether the detrimental effects of power on performance apply in cross-cultural settings given work is becoming increasingly global in nature. Moreover, power has been shown to have different effects on individuals from different cultures (Zhong, Magee, Maddux, & Galinsky, 2006), suggesting many findings in the current research might differ across cultures.

Fourth, a potential limitation of Studies 1A, 3, and 4 is that the change in contexts from one in which power is manipulated to one in which performance is assessed may act as a manipulation of power in itself and contribute to the effects we observed. That is, high power individuals might have suffered a loss of relative power and low power individuals might have enjoyed a relative gain in power when moving to a context in which they work with others equal in power to them. Study 2, helps mitigate this concern. However, future research should explore the extent to which changes in contexts affect perceptions of relative power.

Fifth, in the negotiation studies (Studies 2 and 3) it is possible that power may lead to people setting and holding more firmly to higher aspiration levels and reservations levels that might make them less likely to reach agreements in negotiations because they are just not willing to give up enough to get the deal done. While we attempted to address this issue with by coding the extent to which participants appeared inflexible and rigid, future research should address this issue empirically by asking negotiators' aspiration or reservations levels beforehand. Future research should also consider the effects of power on alternative measures of group performance in negotiations such as the quality of negotiation outcomes, time to agreement or general satisfaction with the deal that would provide a more nuanced and richer understanding of the effects of power in these contexts beyond the relatively limited perspective provided by the dichotomous agreement measure used in the current studies.

Another interesting issue worthy of further study is whether high power members of groups are aware of each other's power. In the current research, participants were likely aware of the relative power of other members' of their group. In some group contexts such as juries, members of the group do not know each other's relative power. In other contexts, such as corporate executive teams, the clarity of relative power may depend on the extent to which reporting lines are articulated explicitly. To the extent that participants are aware of others' power, such knowledge may affect role expectations and subsequent behavior. This matters to the extent that changes in behavior are different between different conditions. It is possible that high power individuals are less concerned with others' relative power given their tendency to focus on themselves rather than others. In this situation, knowledge of others power matters less to the powerful than to those with less power. In contrast, to the extent that high power individuals are more conscious of threats to their standing in groups and the group context raises this concern, then high power individuals may be more likely to react than low power individuals in these contexts.

Though our research focused on groups of high power individuals, it is also important to examine the effects of status as well. Research is increasingly showing different effects for the possession of power and status (Blader & Chen, 2012; Fast, Halevy, & Galinsky, 2012). It is possible that groups of high status individuals might work well together, because status appears to promote more prosocial behavior and has positive benefits for information exchange (Wittenbaum, 1998, 2000). On the other hand, research also suggests that high status individuals are particularly threatened by the potential of losing status (Gruenewald, Kemeny, Aziz, & Fahey, 2004). Therefore, it is possible that high status individuals, confronted with other high status individuals, might feel threatened and react negatively.

Finally, research in the negotiations literature suggests the powerful feel more entitled and set higher reservation prices which leads them to claim more value (Pinkley, 1995; Pinkley, Neale, & Bennett, 1994; Giebels, De Dreu, & Van de Vliert, 2000). However, the extent to which the powerful achieve better outcomes depends on the distribution of power between the negotiation partners and the evidence is decidedly mixed with some research suggesting that a balance of power leads to better outcomes (e.g., Davidson, McElwee, & Hannan, 2004, p. 275; De Dreu & Van Kleef, 2004; Giebels et al., 2000; Mannix, 1993; Mannix & Neale, 1993; McAlister, Bazerman, & Fader, 1986; McClintock, Messick, Kuhlman, & Campos, 1973; Olekalns & Smith, 2013, p. 4; Pinkley, Neale, & Bennett, 1994; Rubin & Brown, 1975; Sheposh & Gallo, 1973; Wei & Luo, 2012; Wolfe & McGinn, 2005), and other research finding that hierarchy has more positive effects

(e.g., Komorita, Sheposh, & Braver, 1968; Roloff & Dailey, 1987; Sondak & Bazerman, 1991; Tedeschi, Bonoma, & Novinson, 1970). One potential explanation for these mixed results might relate to the different levels of power present in these groups. That is, if the average level of power is high then power-balanced groups may perform worse than groups that are more hierarchical and vice versa. Future research should investigate this idea and also examine whether the powerful do indeed feel more entitled and set higher reservation prices in contexts in which power is not operationalized as the number or quality of alternatives as is common in the negotiations literature. Indeed ". . . when power is manipulated through the value of the best alternative, the sum of the parties' alternatives is strongly associated with integrativeness. This result is not surprising—the parties need to surpass their alternatives to reach agreement (Ben-Yoav & Pruitt, 1984)" (Wolfe & Mcginn, 2005, p. 4).

Conclusion

Our research posed the question of how leaders' power affects their ability to work with other leaders. The answer we found was disheartening. When individuals with power are assembled to work as a group on difficult issues, their power had a negative effect on their group's collective performance. Groups comprised of more high power individuals, be they students given temporary power or executives endowed with actual organizational power, performed worse than groups comprised of neutral or low power individuals—particularly on tasks that required more coordination among members. And, these detrimental effects of power on group performance are explained in part by members of these groups experiencing higher levels of status conflict, being less focused on the task at hand and sharing information less effectively with each other compared with other groups. In contrast, for group tasks that required little to no coordination, groups of high power individuals performed *better* than other groups. Thus, it appears that group processes are the major cause for failure when high power individuals must work together in groups.

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(*Appendix follows*)

Appendix

Group Task Instructions for Study 1A (/1B)

You are the founders (/founder) of a new company. As founders (/founder) you will need to decide upon a product or service that your company will provide; the goals and the strategies the company will use to achieve those goals; and a name for the company. You have 15 min to complete all Steps 1 to 3 of this task and answer the five questions.

[Study 1A only:] Even though we have handed you each a copy of these instructions, you will turn in just one group response to this task.

Step 1: Choosing a Product or Service

To begin, you will need to decide upon a product or service that your company will provide. Decide on what product or service your company will provide and explain why you think this will be a successful idea.

1. What is a product or service that your company could provide? [8 blank lines for response]

Step 2: Choosing a Name

We would now like you to discuss some names for your company, and to choose one of these names.

2. What are some possible names for your company? [5 blank lines for response]
3. What is the name you choose for your company? [3 blank lines for response]

Step 3: Goals and Strategies

Like any other organization or business, your company should have some goals that you aim to achieve, and strategies designed to help you meet those goals. In this step, you will outline your more long-term goals and describe the strategies that you will use to meet these goals.

4. How will you measure success for your company? For example, you could measure your company's success with benchmarks for membership totals, raising capital, market share, and so forth. Based upon your selected measures of success, please choose three specific goals that you would like to accomplish within your company's first 2 years of operation and describe them below. [8 blank lines for response]
5. What strategies will you use to attempt to meet your goals? Please describe your company's three main strategies. [8 blank lines for response]

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