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When power makes others speechless: The negative impact of leader power on team performance

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Running Head: Power and Team Performance

When power makes others speechless:

The negative impact of leader power on team performance

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ABSTRACT

We examine the impact of subjective power on leadership behavior and demonstrate that the psychological effect of power on leaders spills over to impact team effectiveness. Specifically, drawing from the approach/inhibition theory of power, power-devaluation theory, and organizational research on the antecedents of employee voice, we argue that a leader's experience of heightened power produces verbal dominance, which reduces perceptions of leader openness and team open communication. Consequently, there is a negative effect of leader power on team performance. Three studies find consistent support for this argument. The implications for theory and practice are discussed.

Key words: Power; Leadership; Teams; Communication; Talking; Dominance; Team Performance; Learning

Conventional approaches in leadership research have treated leadership and power as virtually synonymous (i.e., leaders are people in positions of power, and people in power are expected to lead). Consequently, little research has examined how leader power, defined as the leader's control over resources and outcomes that accrue to others (Keltner, Gruenfeld, & Anderson, 2003; Thibaut & Kelley, 1959), affects leaders' engagement in behaviors that impact team performance. However, more recent approaches to leadership recognize that power and leadership often diverge (DeChurch, Hiller, Murase, Doty, & Salas, 2010; Mehra, Smith, Dixon, & Robertson, 2006; Rus, van Knippenberg, & Wisse, 2010). In particular, feelings of power can differ within a functional leadership role, such that the occupant of a given position may experience different levels of control at different points in times or in different contexts (Klein, Ziegert, Knight, & Xiao, 2006). In addition, research on leadership cascades recognizes that leadership occurs at multiple levels in organizations and is not the exclusive province of top management (e.g., Mayer, Kuenzi, Greenbaum, Bardes, & Salvador, 2009). Moreover, research on power in organizational settings has long understood the importance of upward influence, which occurs when an individual leads others in the organization who possess greater levels of power or authority (Mechanic, 1962; Tangirala, Green, & Ramanujam, 2007). The observation that power can vary within a specific leadership role and across leaders, combined with the prevalent recognition that leadership can have a significant impact on team performance (Dionne, Yammarino, Atwater, & Spangler, 2004; Guzzo & Dickson, 1996; Schaubroeck, Lam, & Cha, 2007), raises important questions about how leader power might affect leaders' behaviors and ultimately team performance: Does a leader's experience of power impact the way the leader engages with followers, and if so, what are the effects on team performance?

Existing theory and research yield conflicting implications on these issues. Leadership and power are closely related constructs. Power refers to an individual's relative ability to control others' outcomes, experiences, or behaviors (Keltner, et al., 2003; Thibaut & Kelley, 1959), while leadership refers to the process of influencing others to pursue group goals (Bass, 2008; Hogg, 2001; Stogdill, 1950). Because power is generally viewed as an important basis of influence (French & Raven, 1959; Lord, 1977), these definitions seem to imply that the prospects of successful leadership are improved by greater leader power. Specifically, the greater the leader's power, the more likely he or she is to be able to use that power to elicit desired behaviors from followers. From this perspective, increased leader power can be expected to increase leader effectiveness and, consequently, team performance.

However, this perspective misses two important points. First, team processes and outcomes are emergent (Marks, Mathieu, & Zaccaro, 2001). That is, they are not pre-existing entities inherent to the team that are simply waiting to be brought forth by the demands of a powerful leader. Instead, much of the performance that organizations expect of organizational members is developed through dynamic processes of team interaction (Marks, et al., 2001). Team processes can produce ideas that did not exist prior to the team's interactions (De Dreu & West, 2001; Mathieu, Heffner, Goodwin, Salas, & Cannon-Bowers, 2000). Thus, leaders cannot simply appeal to their power to elicit performance; instead, performance must be cultivated by creating a team context that facilitates high levels of performance (Anderson & West, 1998; Agrell & Gustafson, 1996; Drach-Zahavy & Somech, 2001; West, 1990). Team performance is dependent upon a variety of factors that cannot be directly affected by a leader's exercise of power.

Second, the outcomes of a leader's exercise of power are not confined to outcomes on follower behavior. Indeed, a broad stream of social psychological research differentiates between the exercise of power and the psychological experience of power, or the powerholder's subjective feelings of control over the resources, outcomes, and experiences of others. This research has documented that the experience of power can have wide-ranging effects on the cognition and behavior of the powerholder, many of which have important implications for the likelihood that a leader experiencing a heightened sense of power would be able to effectively facilitate team performance. For example, research has demonstrated that the psychological experience of power leads powerholders to objectify others (Gruenfeld, Inesi, Magee, & Galinsky, 2008), to be less adept at understanding the perspectives of others (Galinsky, Magee, Inesi, & Gruenfeld, 2006), to become more goal-oriented in their cognitions (Guinote, 2007), and to rely more heavily on stereotyping rather than individuating others (Fiske, 1993; Goodwin, Gubin, Fiske, & Yzerbyt, 2000; Goodwin, Operario, & Fiske, 1998).

The integration of these two points implies that, although much of the variation in team performance depends on factors that cannot be directly impacted by a leader's exercise of power, the psychological experience of power among leaders may influence leader behavior and thereby indirectly influence performance in their teams. If this implication is correct, then a greater understanding of the impact of leader power on team dynamics and performance can play an important role in advancing both scholars' and practitioners' knowledge about the impact of leadership on team success.

Therefore, in the present research, we explore the effect of leader power on team performance as mediated by a critical determinant of team success: the level of open communication within the team. Team communication plays a crucial role in facilitating high

levels of team performance (Dionne, et al., 2004; Smith et al., 1994), and recent research indicates that leader power may affect leaders' communication within the team (e.g., Anderson & Berdahl, 2002; Berdahl & Martorana, 2006). We draw on social psychological theories of power (Keltner, et al., 2003; Kipnis, 1972) and organizational research on the antecedents of employee voice (e.g., Detert & Burris, 2007) to argue that when a leader feels a heightened sense of power, he or she tends to dominate group discussions and interactions, thereby suppressing contributions from other team members and consequently decreasing team performance.

In doing so, we aim to make three central contributions to organizational research. First, we highlight that the subjective sense of power is an important variable in organizational studies. Specifically, previous social psychological research has demonstrated that in addition to being a structural variable that specifies the relative control that individuals have over resources and outcomes, power is also relative (Emerson, 1962) and can be evaluated subjectively (Anderson & Berdahl, 2002), such that individuals with similar levels of structural power can experience varying degrees of a psychological sense of power. This insight is critical because, as we demonstrate, an individual's psychological sense of power can have important implications for the dynamics and functioning of the group in which that individual is embedded. The effects of the subjective sense of power are not confined to the individual but also spill over to impact the processes and outcomes achieved by groups.

Second, in the spirit of suggestions that more scholarly attention be directed to understanding the determinants of leadership behavior (House & Aditaya, 1997) and to explicating the relation between leadership and power (Hollander & Offermann, 1990), we examine the impact of power on leader behaviors, including leaders' tendencies to dominate their social interactions. By showing that leader power has a considerable impact on leadership

behaviors that impact team performance, we demonstrate the utility of moving beyond the broader and more pervasive focus on leadership styles to examine the determinants of specific leadership behaviors. We also demonstrate that research into the psychological determinants of leader behavior can make important contributions to scholarly understanding of the determinants of leader effectiveness and the impact of leaders on the performance of their teams.

Third, we also contribute to research on the antecedents of effective team interaction and employee voice. Specifically, we highlight the role of leader power in inducing leader behaviors that decrease perceptions of leader openness. We further demonstrate how these effects diminish open communication within the team and consequently have a negative impact on team performance.

Below, we describe the theoretical underpinnings of our argument in detail, and we then describe three studies that explore our predicted effects. In our first study, we use an experimental design in a laboratory setting to examine how a sense of power leads individuals to speak more in dyadic interactions, and to be perceived by their interaction partners as more dominant. We build on these findings with two subsequent studies in which we examine how an increased sense of power among leaders affects team performance, as mediated by the openness of communication within the team, in simulated team decision contexts. We find support for our predictions across the three studies, and the findings point to the important role of leader power in impacting team processes and consequently team performance outcomes.

LITERATURE REVIEW AND HYPOTHESES

Research indicates that open communication is critical for team effectiveness. Specifically, research has shown that effective communication within the team is a crucial determinant of team performance (Dionne, et al., 2004; Guzzo & Dickson, 1996; Urban, Bowers,

Monday, Morgan, 1995), including team productivity (Pearson, 1991), coordination (Stout, Salas, & Carson, 1994), cooperation (Orbell, van de Kragt, & Dawes, 1988), and innovation (Catmull, 2008; Edmondson, 2003). In the sections below, we build on recent social psychological research on the effects of power on the powerholder, as well as research on the determinants of employee voice, to explain how leader power has a detrimental effect on team performance by decreasing the openness of communication within the team.

Power and Dominating Behavior in Social Interactions

Two social psychological theories support the notion that power is likely to induce leaders to dominate interpersonal and group interactions: the approach/inhibition theory of power and power-devaluation theory. The approach/inhibition theory of power (Keltner, et al., 2003) holds that power activates the behavioral approach system, which makes high-power individuals more proactive and action-oriented. Consistent with this view, Magee and colleagues (Magee, Galinsky, & Gruenfeld, 2007) found that individuals in structural positions of power were more likely to make the first offer in negotiations than were their less powerful counterparts. Similarly, Galinsky and colleagues (Galinsky, Gruenfeld, & Magee, 2003) found that individuals primed with power (i.e., individuals who were not assigned a structural position of power but instead were induced to feel a psychological sense of power) were more likely to take action to eliminate an annoying stimulus and were more likely to take action in a social dilemma (regardless of whether the action had prosocial or antisocial consequences). With respect to social interactions, this line of research has shown that power leads individuals to be more inclined to express their attitudes and opinions in group contexts (Anderson & Berdahl, 2002; Berdahl & Martorana, 2006).

According to the approach/inhibition theory of power, a key reason that power leads to greater action-orientation and attitude and opinion expression is that people who experience heightened power tend to be more internally-driven and less situationally-constrained in their behavior than less powerful individuals (Galinsky, Magee, Gruenfeld, Whitson, & Liljenquist, 2008; Keltner, et al., 2003; Rus, et al., 2010). In other words, the behavior of individuals who experience a psychological sense of power is driven more by their own beliefs, preferences, and goals than by more peripheral features of the social situation. A second process is also likely to lead individuals experiencing high power to express their attitudes and opinions. According to power-devaluation theory (Kipnis, 1972), individuals who experience increased feelings of power come to devalue the contributions of others. Consistent with this view, Georgesen & Harris (1998) found in a meta-analytic review that increased levels of power lead to lower evaluations of others and enhanced evaluations of the self.

Thus, the approach/inhibition theory of power predicts that individuals experiencing heightened power are more inclined to express their attitudes and opinions and that high-power individuals' internal states are an important driver of these expressions. At the same time, power-devaluation theory predicts that high power individuals' internal states are characterized by a belief that their contributions are more valuable than those of others. Combining these insights, we expect that high-power leaders dominate interpersonal and group interactions. Specifically, individuals who are prone to express their attitudes and opinions, and who feel that their perspectives are more valuable than the perspectives of others, are likely to feel entitled to dominate interpersonal interactions. We therefore expect that power leads individuals to talk more in group interactions and to attempt to dominate interpersonal and team discussions. We propose the following hypotheses:

Hypothesis 1: An individual's experience of power has a positive effect on others' perceptions of the individual's dominance behavior.

Hypothesis 2: An individual's experience of power has a positive effect on the individual's amount of talking in social settings.

These first two hypotheses focus on the impact of power on the powerful individual's behavior and consequent perceptions by others. In the next section, we explain how these effects translate into an effect of leader power on team processes.

Leader Power and Diminished Input from Team Members

A logical implication of our second hypothesis is that team members in teams with high power leaders are likely to talk less. Specifically, if team discussions take place over a finite amount of time, and power causes the leader to talk more, then other team members would necessarily have to talk less because there would be less time available for them to provide input. Indeed, we expect this to be the case:

Hypothesis 3: In social interactions, when one individual experiences heightened power, other individuals talk less.

However, we contend that the negative impact of high power leaders' increased talking on input from others is due not only to decreased amounts of time available for talking but also to a perception that leaders are not interested in hearing team members' input.

Just as open communication is critical for team effectiveness (Catmull, 2008; Dionne, et al., 2004; Edmondson, 2003; Guzzo & Dickson, 1996; Urban, et al., 1995), research has also shown that leader openness is critical for producing team open communication. The openness of communications within a team has been defined both at the level of individual team members' perceptions of the leader (leader openness) and at the level of individual team members'

perceptions of the team as a whole (team open communication). Leader openness refers to the extent to which individuals in the team feel that the leader listens to them, is interested in their perspective, and considers their ideas (Ashford, Rothbard, Piderit, & Dutton, 1998; Detert & Burris, 2007), and team open communication refers to the extent to which individuals in the team feel that the team as a whole tends to listen to team members' ideas and encourages and facilitates input from all members of the team (Barry & Stewart, 1997).

A broad range of research has documented the positive effect of perceptions of leader openness on team open communication. Research on the antecedents of employee voice has demonstrated that leader openness is a crucial determinant of the likelihood that employees will voice ideas for innovations, suggestions for the improvement of team processes and outcomes, and information that can enhance team performance (Ashford, et al., 1998; Detert & Burris, 2007; Detert & Trevino, 2010; Morrison & Milliken, 2000). For example, in a two-phase survey of restaurant chain employees, Detert & Burris (2007) found a strong relationship between managerial openness and subordinates' improvement-oriented voice (which refers to the discretionary provision of information relevant to improving organizational functioning). In a qualitative study, Detert & Trevino (2010) found that leaders can increase employee voice by cultivating a perception of openness. Similarly, Edmondson (1999, 2002) found that team members were more likely to communicate their perspectives and concerns when they felt their leaders welcomed their communication. Moreover, research on "issue selling" shows that leader openness determines the likelihood that team members will raise important strategic issues (Dutton, Ashford, O'Neill, Hayes, & Wierba, 1997).

We expect that leader power has a negative effect on perceptions of leader openness, and consequently on team open communications, because high power leaders' tendencies to

dominate social interactions sends cues to other team members that their perspectives are not valued. Specifically, as explained above, power makes leaders more expressive of their personal attitudes and opinions (Anderson & Berdhal, 2002; Berdhal & Martorana, 2006; Keltner, et al., 2003) and thus likely to spend more time talking and less time listening. In addition, power drives leaders to view their own input as more valuable than the input of others (Georgesen & Harris, 1998). Consequently, high power leaders are likely to convey through their interpersonally dominant behavior that the input of other team members is not valued. This expectation is consistent with research showing that power leads to a disinclination to consider the perspective of others (Galinsky, et al., 2006) and to a tendency to rely more heavily on stereotyping rather than to individuate others (Fiske, 1993; Goodwin, et al., 2000; Goodwin, et al., 1998). It is also consistent with interpersonal circumplex theories (Wiggins, 1979), which hypothesize that one individual's dominant behavior is likely to elicit a complementary submissiveness by interaction partners (Carson, 1969; Kiesler, 1983). Indeed, previous research has indicated that dominant behavior by one individual can prompt submissiveness by others (e.g., Tiedens & Fragale, 2003). We expect that this submissiveness emerges at least in part because the dominant person's behavior conveys to others that their input is not valued. We therefore predict the following:

Hypothesis 4: Leader power has negative effects on other team members' perceptions of leader openness and team open communication.

Based on previous research indicating the importance of open communication to team effectiveness (Dionne, et al., 2004; Guzzo & Dickson, 1996; Urban, et al., 1995), we further expect that because of the negative effect of leader power on perceptions of open communication within the team, there will also be a negative effect of leader power on team performance:

Hypothesis 5: Leader power has a negative effect on team performance, and this effect is mediated by team members' perceptions of leader openness and team open communication.

The Moderating Role of Team Member Instrumentality

As mentioned above, our expectation that high-power leaders are perceived as lower in leader openness is consistent with extensive social psychological findings indicating that high power people fail to give individual attention to those around them (Fiske, 1993; Goodwin, et al., 2000; Goodwin, et al., 1998). However, recent research has identified an important moderator of this effect: the instrumentality of others. Specifically, research has indicated that high-power individuals objectify those around them, paying little attention to those who are not relevant to their goal pursuit and greater attention to those who are useful in achieving their goals. For example, Overbeck and Park (2006) found that high-power decision makers better individuated others when they were assigned to promote "people-centered" rather than "product-centered" goals (i.e., when they were asked to ensure that others over whom they had control felt positive and engaged, with a high sense of belonging, as opposed to ensuring that the group achieve necessary levels of production). In addition, Gruenfeld and colleagues (Gruenfeld, et al., 2008) found that high power individuals expressed greater interest in those who were instrumental to their goals than to those who were not.

Thus, although power causes people to focus more on their own goals than on the individuals around them, powerful people increase their attention to those they perceive to be instrumental to their goal pursuit. This line of reasoning suggests that when high-power leaders are made aware that other team members have the capacity to make important contributions to the pursuit of team goals, the negative effect of leader power on team performance may be

minimized. Specifically, when high-power leaders are made aware of others' potential contributions, they are likely to be motivated to learn about those contributions and consequently to encourage open communication in the team so that contributions can be revealed. Thus, when high-power leaders perceive team members as instrumental to their goals, the negative effect of power on communication within the team is likely to be minimized, which is likely in turn to eliminate the negative effect of power on team performance. We therefore predict the following:

> *Hypothesis 6: Team member instrumentality will moderate the effect of leader power on team performance as mediated by team open communication. Specifically, when team members are described as instrumental to the pursuit of team goals, the negative relationship between leader power and team performance will be eliminated, as will the mediated path.*

Overview of the Present Research

We conducted three studies to test these hypotheses. Study 1 was designed to establish the fundamental premise of our arguments: that a leader's power leads to greater amounts of talking and to dominating behavior in interpersonal interactions, which in turn diminishes the input provided by others. Because we expect this basic effect to generalize beyond the context of team leadership, this first study examines the effect of power on dyadic interactions between two individuals. Specifically, in Study 1, we tested Hypotheses 1, 2, and 3 in an experiment in which we manipulated the level of power experienced by one individual in a dyad. We examined the impact of this manipulation on the amount of talking by each member of the dyad as well as on dyad members' perceptions of the dominating behavior of their partners.

Studies 2 and 3 move the investigation into a team leadership context in order to test our predictions about the effect of leader power on team dynamics and performance. Specifically,

Studies 2 and 3 involved teams of four to six members participating in team decision-making simulations. In Study 2, we tested Hypotheses 2, 3, 4, and 5 by manipulating the level of power experienced by team leaders. We examined the effect of this power on the leader's and team members' amounts of talking (Hypotheses 2 and 3), on perceptions of leader openness (Hypothesis 4), and on team performance as mediated by leader openness (Hypothesis 5). In Study 3, we used a leader power manipulation in the context of a hidden profiles task in order to examine the effect of leader power on team performance as mediated by team open communication and as moderated by team member instrumentality (Hypothesis 6).

STUDY 1

Participants and Design

One hundred sixteen college students at a university in the Southeastern United States (62 female; M_{age}=20.86, SD=1.62) participated in the study in exchange for $10. The study employed one between-subjects factor: high power vs. low power dyad member. Participants completed the study within a dyad, and the manipulation occurred on only one of the two members of each dyad.

Procedures

Participants were told they would be completing two unrelated studies within the same session. Upon arrival to the lab, they received a team ID and an individual ID. The experimenter informed them that they would complete the first task individually and the second task with another participant. Participants were told that the first study assessed their writing skills. We used this first study to introduce our power manipulation using a priming task employed in prior studies (e.g., Galinsky, et al., 2003). Based on the experimental condition, one of the participants in each dyad was asked to recall a situation in which they had power over other people (high

power) or a situation in which other people had power over them (low power), and to write down the details of the situation (see Gruenfeld, et al., 2008). The other dyad member was always asked to write about his/her last visit to the grocery store. In this way, each dyad consisted of one member who wrote about a visit to the grocery store and another member who wrote either about a high or low power experience. Consistent with the definition of power as an individual's relative ability to control others' outcomes, experiences, or behaviors, the instructions used in the *high* [*low*] power condition read as follows:

> Please think about a time when *you had power over someone* [*when someone had power over you*]. By power, we mean a situation in which *you* [*this person*] controlled *the ability of another person or persons* [*your ability*] to get something *they* [*you*] wanted, or were in a position to evaluate *those individuals* [*you*]. Please write 4-5 sentences describing this situation in which you *had* [*did not have*] power.

Participants who wrote about their last visit to the grocery store received the following instructions:

> Please think about the last time you were at the supermarket shopping for yourself. Please write 4-5 sentences describing this situation and one item or product that you purchased for yourself.

After completing the writing task, participants were asked to sit at a desk with their dyad member so that they could engage in the second (supposedly unrelated) study. For this study, participants were told we were interested in examining how people reason about problem-solving tasks and give advice to others on effective strategies to use when facing or discussing business problems. We informed participants that this study was part of a broader initiative to find ways to help students improve their performance in interviews for consulting jobs, where case analyses are often used in the recruiting and selection process. As we explained to participants, the study employed cases that students commonly face during interviews. We presented each dyad with

the following business problem and told them that they would be given time to discuss how to best solve this problem and formulate their advice to students preparing for interviews:

> Your client is a company who makes specialist batteries for mobile homes (motor homes) in the USA. The battery is very powerful, long lasting and of high quality. New industry conditions are occurring and motor home dealers are starting to use a cheaper battery as the "factory standard" in an attempt to lower the overall price of motor homes. Your client's product is now only offered as an added feature for which the customer must pay an extra $500. In this case question you are to discuss how your client should go about maintaining profits given these new market conditions.

Participants in each dyad were given 20 minutes to read the problem and discuss how they would answer the question asked in the case. At the end of the 20 minutes, participants were asked to prepare an answer together to use as advice to a student who would be engaging in case interviews later in the school year.

Participants then answered a short survey containing our manipulation checks, measures assessing participants' perceptions of the person they worked with and their interactions with this person, demographic questions, and a few filler questions.

Measures

Dominance. We assessed interpersonal dominance using the relevant dimension from Wiggins's (1979) circumplex measure. Participants indicated the extent to which 14 markers of high (e.g., "dominant" and "forceful") and low (e.g., "meek" and "shy") interpersonal dominance characterized their dyad member using a 7-point scale (1=extremely inaccurate, 7=extremely accurate). The low-dominance items were reverse-scored. The scale proved to be highly reliable (α=.82).

Amount of talking. Unbeknown to participants, the experimenter recorded the number of minutes each of the dyad members spent talking during the 20 minute discussion. In addition, we also asked participants to indicate their perceptions of the amount of talking done by their

counterpart. For this measure, participants indicated the extent to which their dyad member talked during the 20 minute discussion they had with him/her (1=not at all, 7=to a great extent).

Manipulation check. To test for the effect of the power manipulation, we asked participants to think back to the experience they had written about at the beginning of the study, and to indicate the amount of power they personally felt in that experience using a 7-point scale (from 1=very little to 7=a great deal).

Results

Manipulation check. We first checked whether our manipulation was successful by examining the ratings participants provided on the question that asked them to indicate the amount of power they felt in the experience they described in the writing task. For this analysis, we only considered participants who wrote about a situation when they had or did not have power over another person: Participants perceived themselves as more powerful in the high-power condition (M=5.17, SD=0.97) as compared to the low-power condition (M=3.93, SD=1.16), $t(56)=4.42$, $p<.001$.

Dominance. Hypothesis 1 predicted that an individual's power would have a positive impact on others' perceptions of the individual's dominance. To test this hypothesis, we considered only the responses of the person in each dyad who wrote about a visit to the grocery store since we are interested in their perceptions of their discussion partner. These participants rated their counterpart as more dominant in the high-power condition (M=4.67, SD=0.86) than in the low-power condition (M=4.09, SD=0.71), $t(56)=2.82$, $p<.01$. Thus, Hypothesis 1 was supported.[1]

[1] We also examined the ratings of individuals who wrote about power. The ratings of participants who wrote about power demonstrated the opposite pattern: Participants who wrote about power rated their counterpart as less dominant in the high-power condition (M=3.76, SD=0.75) than in the low-power condition (M=4.21, SD=0.74),

Amount of talking. Hypothesis 2 predicted that power would have a positive effect on the powerholder's amount of talking. Participants in each dyad who wrote about power spent more minutes talking during the 20 minute discussion when they wrote about high power (M=12.41, SD=2.71) than when they wrote about low power (M=9.45, SD=2.35), t(56)=4.45, p<.001. In addition, individuals who wrote about high power also talked more than their interaction partner (M=12.41, SD=2.71 vs. M=6.93, SD=3.12, t[56]=7.15, p<.011). With respect to participants' perceptions of talking, participants in dyads that wrote about a visit to the grocery store indicated that their counterpart talked to a greater extent in the high-power condition (M=6.34, SD=0.67) than in the low-power condition (M=4.79, SD=1.29), t(56)=5.74, p<.001. Thus, Hypothesis 2 was supported.

Hypothesis 3 predicted that interacting with a high power other would lead individuals to talk less. Participants who wrote about a visit to the grocery store spent fewer minutes talking during the 20 minute discussion with their dyad member in the high-power condition (M=6.93, SD=3.12) than in the low-power condition (M=10.28, SD=2.58), t(56)=-4.46, p<.001. With respect to the self-reported measures of talking, participants in each dyad who wrote about power indicated their counterpart talked to a lesser extent in the high-power condition (M=3.69, SD=1.31) than in the low-power condition,(M=4.97, SD=0.98), t(56)=4.19, p<.001. Thus, Hypothesis 3 was supported.

Discussion

The results of our first study provided support for our fundamental contention that power induces individuals to engage in dominant behavior, especially verbal dominance of social interactions. Using a design in which powerful or powerless people interacted with another

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t(56)=2.29, p<.05. This finding is consistent with our expectation that the dominating behavior of high power individuals elicits less dominant behavior from those with whom they interact.

person to discuss a business problem, we found that individuals who wrote about high power were perceived as more dominant by their interaction partners, spent a greater amount of time talking as compared to individuals who wrote about low power and as compared to their interaction partners, and were perceived as talking more by their interaction partners. In addition, individuals who were paired with those who wrote about high power talked less than individuals who were paired with those who wrote about low power. In Studies 2 and 3, we examine the effects of leader power on perceptions of leader openness, team open communication, and team performance in the context of simulated team decision tasks.

STUDY 2

Participants and Design

One hundred six undergraduates and MBA students at a university in the Southeastern United States participated in the simulation study as part of a class exercise. The study employed one between-subjects factor: high power vs. control. Students were randomly assigned to a team of five members (six teams had an additional sixth member with the role of observer), for a total of twenty teams. Students completed the study within their team, and the manipulation occurred only on the leader within each team.

Procedures

The day prior to the simulation, students were given instructions to Everest Simulation, a web-based simulation that uses the context of a Mount Everest expedition to reinforce student learning in team dynamics and leadership. Students were assigned one of 5 roles on a team attempting to summit the mountain. Throughout the simulation, students sat in break-out rooms with their team members and made their decisions on their own laptops while communicating with one another aloud. The simulation lasted 6 rounds, totaling about 80 minutes of seat time. In

each round, team members analyzed information on weather, health conditions, supplies, goals, or hiking speed, and they determined how much of that information to communicate to their teammates. Team members then collectively discussed whether to attempt to reach the next camp en route to the summit. Throughout the simulation, the team must decide how to effectively distribute supplies and oxygen bottles needed for the ascent. These decisions affect hiking speed, health, and ultimately the team's success in summiting the mountain. Failure to accurately communicate and analyze information as a team has negative consequences on team performance.

The day prior to the simulation, when students received instructions regarding the exercise, leaders in the teams assigned to the high-power condition were asked to think about a time when they had power over someone and to write about this situation (the same instructions as those given to participants in the high-power condition of Study 1). In addition, they were asked to write about how that experience could inform the strategies they would use in team interactions the next day. Leaders in the teams assigned to the control condition did not receive any additional instructions.

The day of the simulation, participants engaged in the exercise for 80 minutes – the entire class time. The simulation recorded the level of goals the team was able to achieve, an objective measure of team effectiveness and performance. Students were also asked to complete an online survey individually before the end of the day, anytime after the simulation was over. The survey included measures we used to assess members' perceptions of their contribution to the team discussion, the amount of talking done by the leader, and the leader's perceived receptivity to the information and suggestions made by the team members.

Measures

Amount of talking. Participants indicated the percentage of the total time each member talked during the simulation.

Leader openness. To assess perceived leader openness, we followed Grant, Gino, and Hofmann's (2011) approach, adapting items from existing measures of leader openness (Ashford et al., 1998; Detert & Burris, 2007) using a 7-point Likert-type scale (1=disagree strongly, 7=agree strongly). We asked the team members to evaluate the leaders on five items: "Open to new ideas," "Receptive to suggestions," "Interested in our ideas," "Rejected new ideas" (reverse-scored), and "Dismissed suggestions" (reverse-scored) (α=.88). We averaged members' ratings to compute an overall score for perceived leader openness.

Team performance. The simulation program recorded the level of goals achieved by the team during the exercise (in percentages). Higher percentages indicate higher levels of goal achievement and thus higher levels of team performance.

Perceived learning. As an additional outcome measure, we asked students in the leadership role to indicate the extent to which they felt they learned new information from their team members throughout the simulation (1=not at all, 7=to a great extent).

Manipulation check. To test for the effect of the power manipulation, we asked leaders to indicate the amount of power and influence they personally felt during the simulation using a 7-point scale (from 1=very little to 7=a great deal). The two items were highly correlated (r=.71, p<.001), and we thus averaged them into a single measure (α=.82).

Results

Team members rated all scales, and their evaluations (those of all members other than the leader) were aggregated into team level indexes, which are used in most of the analyses presented below. Given that six teams had an observer, we controlled for team size in all our

analyses. Team size was not a significant predictor of any of these results, so we do not discuss this variable further.

Manipulation check. We first checked whether our manipulation was successful by examining the ratings leaders provided on the question asking them to indicate the amount of power and influence they felt throughout the simulation. Leaders in the high-power condition felt more powerful (M=5.50, SD=0.75) than those in the control condition (M=4.20, SD=0.54), $F(1,17)=18.91$, $p<.001$.

Amount of talking. (ICC(2)=.87, F[18.54]=7.38, $p<.001$). Hypothesis 2 predicted that power would have a positive effect on leaders' amounts of talking, and Hypothesis 3 predicted that when one individual has a high level of power, others would talk less. Team members reported that their leaders talked for a higher percentage of the allotted time for the simulation in the high-power condition (M=32.73%, SD=6.63) as compared to the control condition (M=18.70%, SD=2.68), $F(1,17)=39.93$, $p<.001$. Thus, Hypothesis 2 was again supported. Consistent with this finding, team members reported that non-leaders talked for a lower percentage of the allotted time in the high power condition than in the control condition, in further support of Hypothesis 3.

Leader openness. (ICC(2)=.60, F[18.54]=2.43, $p<.01$). Hypothesis 4 predicted that leader power would have a negative effect on team members' perceptions of the leader's openness. Team members reported lower perceptions of leader openness in the high-power condition (M=4.84, SD=0.56) than in the control condition (M=5.37, SD=0.43), $F(1,17)=5.78$, $p<.05$. Thus, Hypothesis 4 was supported.

Team performance. Hypothesis 5 predicted there would be a negative effect of leader power on team performance. Consistent with this expectation, teams achieved a higher level of

their team goals in the control condition (M=76.20%, SD=11.92) than in the high-power condition (M=59.00%, SD=13.12), $F(1,17)=8.99$, $p<.01$.

Mediation analyses. Hypothesis 5 also predicted that the negative effect of leader power on team performance would be mediated by leader openness. We therefore examined whether perceived leader openness mediated the effects of leader's power on team performance, controlling for team size (Baron & Kenny, 1986). Consistent with this expectation, in a hierarchical regression analysis in which leader power (control = 0; power = 1) predicted team performance (controlling for team size), entering leader openness into the equation revealed a significant effect of leader openness (β=14.03, $p<.001$) and reduced the effect of leader power to non-significance (from β=-17.20, p=.008 to β=-9.21, p=.118). This analysis indicates that leader openness fully mediated the negative effect of leader power on team performance. Thus, Hypothesis 5 was supported.

As previously explained, we expected that the leader's dominant behavior, and particularly the leader's verbal dominance, would be key to producing these negative perceptions of leader openness. We therefore also examined a three-stage mediated path model as depicted in Figure 1. Specifically, we examined whether there is an indirect effect in which leader power has a positive effect on leader talking, which in turn has a negative effect on leader openness, which finally transmits the effect onto team performance. To examine this model, we conducted a series of three regressions, each controlling for team size. We first regressed leader's amount of talking on leader power (β=14.03, $p<.001$), then regressed leader openness on leader's amount of talking (β=-0.048, $p<.001$), and finally regressed team performance on leader openness (β=15.19, p=.012) and leader power (β=-9.21, p=.12). We used a bootstrap analysis to construct bias-corrected confidence intervals based on 1,000 random samples with replacement from the full

sample (MacKinnon, Fairchild, & Fritz, 2007; Shrout & Bolger, 2002). The bootstrap analysis showed that the 95% bias-corrected confidence interval for the size of the indirect effect did not include zero (-22.49 to -0.156), suggesting a significant indirect effect and supporting our path model depicted in Figure 1.

Perceived level of learning. Consistent with the theorizing and findings reported above, we expected that high power leaders would report a lower level of learning from their team members than would leaders in the control condition. Consistent with this expectation, a one-way ANOVA (with team size as a covariate) revealed that high power leaders reported a lower level of learning (M=4.50, SD=1.27) than did leaders in the control condition (M=5.60, SD=0.70), $F(1,17)=5.56$, $p<.05$. This finding reinforces our contention that leader power has a negative effect on team processes and outcomes.

Discussion

The results of Study 2 replicated our finding regarding the effect of power on talking (Hypotheses 2 and 3) from Study 1. Study 2 also demonstrated that leader power decreases perceived leader openness and consequently diminishes team performance (as well as leader learning). By doing most of the talking, powerful leaders conveyed a sense that they were not open to others' input, and this dynamic produced a lower level of team performance as measured by the team's ability to reach its goals in the simulation.

Study 3 was designed to further investigate the role of power on team performance in the context of a hidden profile task. Hidden profile tasks contain a correct or best alternative, and the information about these alternatives is distributed among team members such that no individual member can detect which alternative is the best by relying exclusively on his or her own information alone (see Stasser, 1992; Winquist & Larson, 1998). Hidden profile tasks can be

solved only if team members exchange and integrate their unshared information and thereby detect the decisional implication of the full information set. In Study 3, participants engaged in a hidden profile task in teams of four members. In this context, we examined the effect of leader power on team performance as mediated by team open communication (Hypotheses 4 and 5). We also examined the moderating role of team member instrumentality (Hypothesis 6).

STUDY 3

Participants and Design

One hundred forty-eight undergraduates and MBA students (66 female; M_{age}=23.70, *SD*=4.99) at a university in the Southeastern United States participated in the study in exchange for class credit. The study employed two between-subjects factors: power (high leader power vs. a control group with no leader) and instrumentality of team members (teams members are instrumental vs. not). Students were randomly assigned to a team of four members.

Procedure

As case material, we used a modified version of the PB Technologies exercise developed by the Dispute Resolution Research Center (DRRC) at Northwestern University's Kellogg School of Management. In this exercise, the top management team of PB Technologies is asked to recommend to the CEO one of three finalists for the position of Chief Financial Officer (CFO). For one candidate, the only common information is negative. However, if team members share information effectively, they discover that this candidate has the most positive profile overall. The other two candidates each have significant unshared negative information. One candidate has a moderate amount of negative information. Most of the unshared information for the other is negative.

The initial instructions described the objective of the study as an investigation of effective decision making. The participants were informed that one candidate was clearly better than the other two. Participants were given 30 minutes to carefully read the material individually. In the high leader power conditions, one of the participants in each team was assigned the role of leader (with a proper nametag indicating this was the case). This leader experienced a power manipulation in which we asked him/her to write for a few minutes before the team discussion about the influence he/she would have over the team throughout the study. In the control conditions, we did not assign any of the team members to the role of leader and thus no one experienced the power manipulation.

To manipulate the instrumentality of team members, we provided additional information to a single team member for each team (this team member was the leader in the high leader power condition; this member was chosen at random from all team members in the control condition). Specifically, in the instrumental-team-members condition, one team member was told that each member was instrumental to the task because team members may not have identical information about the candidates and that, therefore, each member's contribution was critical for reaching good decisions. For teams assigned to the high leader power condition, the leader received this information; for teams assigned to the control condition, a single randomly chosen team member received this information. In the non-instrumental-team-members conditions, no one received any additional instructions.

After reading the case material, participants sat at a table with their teams so that they could discuss the case together. They were given 20 minutes to reach a team decision, and a piece of paper on which to record it. After the 20 minutes were over, each member completed a final questionnaire assessing how open they found the communication among team members to

be during the discussion. In addition, the questionnaire included filler items and a few demographic questions.

Measures

Team open communication. Each member indicated the extent to which they agreed with each of four statements (1=strongly disagree, 7=strongly agree) measuring communication openness: 1) All members had a chance to express opinions; 2) Team members listened to each other's input; 3) Members held back in fear of what others thought (reverse-scored); and 4) Members were free to make positive and negative comments. This scale was adapted from Barry and Stewart (1997). We averaged the four items into a single score (α=.91).

Team performance. We assessed team performance using a dichotomous variable that was equal to one if the team reached the right solution by recommending the best candidate, and zero otherwise.

Results

Open communication. Hypothesis 6 suggests that the negative effect of power on team open communication should emerge only when team members are not described as instrumental. To investigate this prediction, we conducted a 2 (power) X 2 (instrumentality of team members) between-subjects ANOVA using open communication as the dependent variable. This analysis revealed a main effect for instrumentality of team members, $F(1,33)=50.91$, $p<.001$, and a main effect for power, $F(1,33)=9.68$, $p<.01$. These main effects were qualified by a significant interaction ($F[1,33]=10.01$, $p<.01$), which is depicted in Figure 2. When team members were not described as instrumental, there was a negative effect of leader power on team open communication, $F(1,33)=19.20$, $p<.001$. This finding replicates the finding from Study 2, lending further support to Hypothesis 4. When team members were described as instrumental,

team members reported communicating equally well, independent of leader power, $F(1,33)<1$, $p=.82$. Taken together, these findings lend initial support to Hypothesis 6.

Team performance. We conducted a similar 2 (power) X 2 (instrumentality of team members) between-subjects ANOVA using teams' correct answer as the dependent variable. This analysis revealed a main effect for instrumentality of team members, $F(1,33)=10.74$, $p<.01$: Teams were more likely to recommend the right candidate in the instrumental-team-members conditions than in the non-instrumental-team-members conditions (68% vs. 22%). The effect of power was not significant, $F(1,33)<1$. As predicted, the interaction between our two manipulations was significant, $F(1,33)=4.77$, $p<.05$. When team members were not described as instrumental, a higher percentage of teams reached the right solution in the control condition than in the high leader power condition (44.4% vs. 0%), $\chi^2(1,N=18)=5.14$, $p<.05$, which mirrors findings from Study 2 and lends further support to Hypothesis 5. When team members were described as instrumental, about the same percentage of teams reached the right solution, independent of the type of power (60.0% vs. 77.8%), $\chi^2(1,N=19)<1$, $p=.41$. These findings lend further support to Hypothesis 6.

Mediated moderation. Next, we examined whether open communication would explain the moderating effect of members' instrumentality on the relationship between leader power and team performance, using a moderated path analysis (Edwards & Lambert, 2007). We expected first-stage moderated mediation, such that team members' instrumentality would moderate the effect of leader power on open communication, which would in turn directly predict team performance. We began by regressing team performance on power, instrumentality, and the interaction between the two. Regression analyses showed that when open communication was entered into the equation, the interaction between our two manipulations became non-significant,

whereas open communication was a significant, positive predictor of team performance (Table 1).

We computed simple effects for our power manipulation at the two levels of members' instrumentality (instrumental members vs. non-instrumental members) using bias-corrected confidence intervals, drawing 1,000 random samples with replacement from the full sample. Hypothesis 6 predicted there would be a significant indirect effect of leader power on team performance mediated by team open communication when team members were not described as instrumental but that this path would not be significant when team members were described as instrumental. Consistent with this prediction, the analysis revealed a significant negative indirect effect of leader power on team performance when team members were described as not instrumental (95% bias-corrected confidence interval: -1.03 to -0.09), and no significant effect when team members were described as instrumental (95% bias corrected confidence interval: -0.30 to 0.27) (Table 2).

Discussion

Study 3 replicated key findings from Study 2. Specifically, when no mention was made of the instrumentality of team members, teams with high power leaders reported lower levels of open communication (Hypothesis 4) and demonstrated lower levels of team performance (Hypothesis 5) as compared to teams in the control condition. In addition, Study 3 supported our contention that team member instrumentality functions as a moderator of these effects. Specifically, when team members were described as instrumental, the negative effects of leader power on team open communication and team performance were eliminated. The results of Study 3 also further supported our prediction that team open communication mediates these effects.

General Discussion

The results of three studies provide consistent evidence in support of our arguments. Specifically, Study 1 demonstrated that power leads individuals to dominate social interactions and to engage in greater amounts of talking, which inhibits input from others. Study 2 replicated the finding that power increases amounts of talking and further demonstrated that leader power decreases perceptions of leader openness and diminishes team performance. Mediation analyses supported the mediating role of leader openness, and path analyses provided support for our three-step causal path in which leader power increases leader talking, which in turn decreases perceptions of leader openness, which finally transmits the negative effect onto team performance. Study 3 further supported these findings and also identified an important boundary condition of these effects. Specifically, in Study 3, teams with powerful leaders reported lower levels of team open communication and exhibited lower team performance than teams in the control condition. However, these effects emerged only in the non-instrumental team members condition. When leaders were informed that other team members held information that was critical to their success, these effects did not emerge. These findings support our contention that team member instrumentality motivates high power leaders to overcome their tendency to discount others' perspectives and input; when high power leaders are aware of the instrumentality of their team members, they are more encouraging of others' input and the negative effect of power on team open communication is eliminated.

Theoretical and Practical Implications

We wish to highlight three sets of theoretical contributions. First, we make two important contributions to a growing body of psychological and organizational research on power. One contribution concerns research on the effects of feelings of power on the powerholder. We show

that feelings of power prompt leaders to increase their amount of talking. Our second contribution is more fundamental. Specifically, we show that the psychological effect of power is not limited to the internal and behavioral effects on the individual experiencing either high or low power. Instead, we show that these internal effects and behavioral consequences impact the entire group in which the individual is situated. Leader power changes collective outcomes by changing the behavior of interaction partners. Our findings therefore represent an important advance in research on the effects of the psychological experience of power, showing that the effects transmit beyond the individual level and to the team level.

We also make important contributions to leadership research. Heeding calls for more research into the determinants of leader behavior (House & Aditaya, 1997) and for a more integrated understanding of the dynamics of power and leadership (Hollander & Offermann, 1990), we examined how a leader's psychological experience of power shapes the impact that leaders can have on team processes and outcomes. Previous work related to power and leadership has tended to focus on how different bases of power impact evaluations of leader effectiveness and style (Atwater & Yammarino, 1996; Lord, 1977) or how different bases of power vary in their ability to elicit compliance from subordinates (Rahim, 1989). In another line of research, Yukl and his colleagues have examined how power impacts the types of influence tactics that individuals use (Yukl & Falbe, 1990; Yukl & Tracey, 1992; Yukl, Falbe, & Youn, 1993). However, very little research has examined explicitly how power impacts leader behavior. One recent exception is research by Rus and colleagues (Rus, et al., 2010), which demonstrated that the impact of power on a leader's proportion of self-serving vs. other-serving behavior depends on the leader's personal beliefs about the appropriate behavior of leaders. We contribute to this nascent line of research in two ways. First, we show that leader power has a

positive effect on leader dominance behavior and amount of talking. Second, we also demonstrate that the effect of leader power is not limited to leader behavior but also spills over to affect perceptions of leader openness, team open communication, and team performance.

We also contribute to research on employee voice and team performance research. Specifically, our research complements previous findings by further confirming the importance of open communication as an antecedent of both employee input and successful team performance. In addition, we identify leader power as an important antecedent of perceptions of low levels of leader openness and diminished team open communication.

This research also has important practical implications for the role of leaders in impacting team performance. Specifically, this research highlights that it may be necessary for organizations and groups to take action to minimize the negative effects of leader power on team performance. This goal may be pursued in multiple ways. One option would be to minimize the psychological experience of power among leaders by maintaining a relatively flat organizational structure and egalitarian culture. Alternatively, organizations may intervene at the point of the mediator, training leaders to cultivate high levels of leader openness and to encourage open team communications. Similarly, organizations may institute practices and policies that serve to remind leaders of the important contributions their subordinates have the capacity to make, thereby reminding leaders that those around them are instrumental to the pursuit of collective goals.

Limitations and Directions for Future Research

These contributions must be qualified in light of several important limitations of our research. First, all three studies presented here were studies conducted in controlled settings (the laboratory or the classroom); this may limit the external validly of our findings. Van den Bos

(2001) suggested that researchers working with new models and theories should first test their hypotheses in experimental settings and then take these models into the field for further validation. We began our investigation of the effects of leader power on talking, dominance, communication, and team performance in controlled settings. By taking advantage of random assignment and manipulations of power that have been validated in previous research, our studies provided consistent and robust evidence that leaders' psychological experience of power can impact their team's processes and performance in important ways. Future research could build on our findings by investigating these effects using different methodological approaches and samples within organizations. The correlation between the effect sizes obtained in the field and those obtained in the lab are generally high (Anderson, Lindsay, & Bushman, 1999). Therefore, we expect this investigation to strengthen the generalizability of the present results and uncover important boundary conditions of both the findings and the theory presented in this paper.

In addition, the new theoretical contributions of this research open up a broad range of new directions for research. Specifically, the finding that the leader's psychological experience of power impacts team-level processes suggests that a broad range of team level outcomes may be affected by leader power, including team learning and innovation. In addition, our findings suggest there may be an intriguing cyclical relationship between power and leadership. Presumably, leadership success at lower levels of organizations breeds power by increasing the likelihood of promotion. However, the research presented here suggests that, at least in some contexts, the experience of power could diminish the effectiveness of the leader at facilitating high levels of team performance. As a result, the very act of promoting someone could cause the performance of that person's team to suffer. Future research should investigate this possibility. In

addition, this research highlights the importance of developing a better understanding of the organizational-level antecedents of leaders' psychological experiences of power (e.g., does a hierarchical culture increase the frequency of these experiences?) and determining ways in which these factors can be modified to diminish the negative impact of leader power on team communications and performance. We hope the present research has laid the groundwork for the pursuit of these and related avenues of inquiry.

REFERENCES

Agrell, A., & Gustafson, R. (1996). Innovation and creativity in work groups. M. A. West (Ed.). ***Handbook of work group psychology***: 314-343. London: Wiley

Anderson, C., & Berdahl, J. L. (2002). The experience of power: Examining the effects of power on approach and inhibition tendencies. ***Journal of Personality and Social Psychology,*** 83(6): 1362-1377.

Anderson, C. A., Lindsay, J. L., & Bushman, J. (1999). Research in the psychological laboratory: Truth or triviality? ***Current Directions in Psychological Science***, 8: 3–9.

Anderson, N.R., & West, M.A. (1998). Measuring climate for work group innovation: Development and validation of the team climate inventory. ***Journal of Organizational Behavior,*** 19: 235-258

Ashford, S. J., Rothbard, N. P., Piderit, S. K., & Dutton, J. E. (1998). Out on a limb: The role of context and impression management in selling gender-equity issues. ***Administrative Science Quarterly***, 43: 23-57.

Atwater, L.E., & Yammarino, F.J. (1996). Bases of power in relation to leader behavior: A field investigation. ***Journal of Business and Psychology***, 11(1): 3-22.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable dstinction in social psychological research: Conceptual, strategic, and statistical considerations. ***Journal of Personality and Social Psychology,*** 51(6): 1173-1182.

Barry, B., & Stewart, G. L. (1997). Composition, process, and performance in self-managed groups: The role of personality. ***Journal of Applied Psychology***, 82: 62-78.

Bass, B. M. (2008). ***The Bass handbook of leadership: Theory, research, and managerial applications***. New York: Free Press.

Berdahl, J. L., & Martorana, P. V. (2006). Effects of power on emotion and expression during a controversial group discussion. ***European Journal of Social Psychology,*** 36(4): 497-509.

Carson, R.C. (1969). ***Interaction concepts of personality***. Chicago: Aldine.

Catmull, E. (2008). How Pixar fosters collective creativity. ***Harvard Business Review***, 86(9): 64-72.

De Dreu, C.K., & West, M.A. (2001). Minority dissent and team innovation: The importance of participation in decision-making. ***Journal of Applied Psychology***, 86(6): 1191-201.

DeChurch, L. A., Hiller, N. J., Toshio, M., Doty, D., & Salas, E. (2010). Leadership across levels: Levels of leaders and their levels of impact. ***The Leadership Quarterly***, 21: 1069-1085.

Detert, J. R., & Burris, E. R. (2007). Leadership behavior and employee voice: Is the door really open? ***Academy of Management Journal***, 50: 869-884.

Detert, J.R., & Trevino, L.K. (2010). Speaking up to higher-ups: How supervisors and skip-level leaders influence employee voice. ***Organization Science***, 21(1): 249-270.

Dionne, Sh. D., Yammarino, F.J., Atwater, L.E, & Spangler, W.D. (2004). Transformational leadership and team performance. ***Journal of Organizational Management***, 17(2): 177-194.

Drach-Zachary, A., & Somech, A. (2001). Understanding team innovation: The role of team processes and structures. ***Group Dynamics: Theory, Research and Practice***, 5(2): 111-123.

Dutton, J.E., Ashford, S.J., O'Neill, R.M., Hayes, E., & Wierba, E.E. (1997). Reading the wind: How middle managers assess the context for selling issues to top managers. ***Strategic Management Journal***, 18(5): 407-425.

Edmondson, A.C. (1999). Psychological safety and learning behavior. ***Administrative Science Quarterly***, 44: 350-383.

Edmondson, A.C. (2002). The local and variegated nature of learning in organizations: A group-level perspective. ***Organization Science***, 13(2): 128-146.

Edmondson, A.C. (2003). Speaking up on the operating room: How team leaders promote learning in interdisciplinary action teams. ***Journal of Management Studies***, 40(6): 1419-1452.

Edwards, J. R., & Lambert, L. S. (2007). Methods for integrating moderation and mediation: A general analytical framework using moderated path analysis. ***Psychological Methods***, 12: 1–22.

Fiske, S. T. (1993). Controlling other people: The impact of power on stereotyping. ***American Psychologist****, 48*(6): 621-628.

French, J. R. P., & Raven, B. (1959). The bases of social power. In D. Cartwright & A. Zander (Eds.), ***Group dynamics*** (pp. 150-167). New York: Harper and Rowe.

Galinsky, A. D., Gruenfeld, D. H, & Magee, J. C. (2003). From power to action. ***Journal of Personality and Social Psychology***, 85: 453-466.

Galinsky, A. D., Magee, J. C., Gruenfeld, D. H., Whitson, J. A., & Liljenquist, K. A. (2008). Power reduces the press of the situation: Implications for creativity, conformity, and dissonance. ***Journal of Personality and Social Psychology****, 95*: 1450-1466.

Galinsky, A. D., Magee, J. C., Inesi, M. E., and Gruenfeld, D. H (2006). Power and perspectives not taken. ***Psychological Science****, 17*: 1068-1074.

Georgesen, J. C., & Harris, M. J. (1998). Why's my boss always holding me down? A meta-analysis of power effects on performance evaluations. ***Personality and Social Psychology Review****, 2*(3): 184-195.

Goodwin, S. A., Gubin, A., Fiske, S. T., & Yzerbyt, V. Y. (2000). Power can bias impression processes: Stereotyping subordinates by default and by design. ***Group Processes and Intergroup Relations****, 3*(3): 227-256.

Goodwin, S. A., Operario, D., & Fiske, S. T. (1998). Situational power and interpersonal dominance facilitate bias and inequality. ***Journal of Social Issues****, 54*(4): 677-698.

Grant, A., Gino, F., & Hofmann, D. (2011). Reversing the extraverted leadership advantage: The role of collective employee proactivity. ***Academy of Management Journal***. In press.

Gruenfeld, D. H., Inesi, M. E., Magee, J. C., & Galinsky, A. D. (2008). Power and the objectification of social targets. ***Journal of Personality and Social Psychology***, 95: 111-127.

Guinote, A. (2007). Power and goal pursuit. ***Personality and Social Psychology Bulletin****,* 33: 1076-1087.

Guzzo, R.A., & Dickson, M.W. (1996). Teams in organizations: Recent research on performance and effectiveness. ***Annual Review of Psychology****,* 47: 307-338.

Hogg, M.A., 2001. A social identity theory of leadership. ***Personality and Social Psychology Review***, 5:184–200.

Hollander, E. P., & Offermann, L. R. 1990. Power and leadership in organizations: Relationships in transition. ***American Psychologist***, 45: 179-189.

House, R. J., and Aditya, R. N. (1997). The social scientific study of leadership: Quo vadis? ***Journal of Management****, 23*: 409-473.

Keltner, D., Gruenfeld, D.H., and Anderson, C. (2003). Power, approach, and inhibition. ***Psychological Review****, 110*(2), 265–284.

Kiesler, D.J. (1983). The 1982 interpersonal circle: Taxonomy for complementarity in human transactions. ***Psychological Review***, 90: 185-214

Kipnis, D. (1972). Does power corrupt? ***Journal of Personality and Social Psychology****, 24*(1): 33–41.

Lord, R.G. (1977). Functional leadership behavior: Measurement and relation to social power and leadership perceptions. ***Administrative Science Quarterly***, 22(1): 114-133.

MacKinnon, D. P., Fairchild, A. J., & Fritz, M. S. (2007). Mediation analysis. ***Annual Review of Psychology***, 58: 593-614.

Magee, J.C., Galinsky, A.D., and Gruenfeld, D.H (2007). Power, propensity to negotiate, and moving first in competitive interactions. ***Personality and Social Psychology Bulletin,*** 33(2): 200–212.

Marks, M.A., Mathieu, J.E., & Zaccaro, S.J. (2001). A temporally based framework and taxonomy of team process. ***The Academy of Management Review***, 26(3): 356-376.

Mathieu, J.E., Heffner, T.S, Goodwin. G.F, Salas, E., & Cannon-Bowers, J.A. (2000). The influence of shared mental models on team process and performance. ***Journal of Applied Psychology***, 85(2): 273-83.

Mayer, D.M., Kuenzi, M., Greenbaum, R., Bandes, M., & Salvador, R.B. (2009). How low does ethical leadership flow? Test of a trickle-down model. ***Organizational Behavior and Human Decision Processes***, 108: 1-13.

Mechanic, D. (1962). Sources of power of lower participants in complex organizations. ***Administrative Science Quarterly***, 7(3): 349-364.

Mehra, A., Smith, B.R., Dixon, A.L., & Robertson, B. (2006). Distributed leadership perceptions and team performance. ***The Leadership Quarterly***, 17: 232-245.

Morrison, E. W. & Milliken, F. J. 2000. Organizational silence: A barrier to change and development in a pluralistic world. ***Academy of Management Review***, 25(4): 706-725.

Orbell, J.M., van de Kragt. A.J.C., & Dawes, R.M. (1988). Explaining discussion- induced cooperation. ***Journal of Personality and Social Psychology***, 54: 811-819.

Overbeck, J.R., and Park, B. (2006). Powerful perceivers, powerless objects: Flexibility of powerholders' social attention. ***Organizational Behavior and Human Decision Processes****, 99*(2): 227–243.

Pearson, C. A. L. (1991). An assessment of extrinsic feedback on participation, role perceptions, motivation, and job satisfaction in a self-managed system for monitoring group achievement. ***Human Relations***, 44: 517-37.

Rahim, M.A. (1989). Relationships of leader power to compliance and satisfaction with supervision: Evidence from a national sample of managers. ***Journal of Management***, 15(4): 545-556.

Rus, D., van Knippenberg, D., & Wisse, B. (2010). Leader power and leader self-serving behavior: The role of effective leadership beliefs and performance information. ***Journal of Experimental Social Psychology***, 46: 922-933.

Schaubroeck, J., Lam, S.S.K., & Cha, S.E. (2007). Embracing transformational leadership: Team values and the impact of leader behavior on team performance. ***Journal of Applied Psychology***, 92(4): 1020-1030.

Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and non-experimental studies: New procedures and recommendations. ***Psychological Methods***, 7: 422-445.

Smith, K.G., Smith, K.A., Olian. J.D., Sims, H.P., O'Bannon, D.P., & Scully, J.A. (1994). Top management team demography and process: The role of social integration and communication. ***Administrative Science Quarterly***, 39(3): 412-438.

Stasser, G. (1992). Pooling of unshared information during group discussion. In S. Worchel, W. Wood, & A. Simpson (Eds.), ***Group process and productivity*** (pp. 48–67). Newbury Park, CA: Sage.

Stogdill, R. M. (1950). Leadership, membership, and organizations. ***Psychological Bulletin***, 47: 1-14.

Stout ,R.J., Salas, E., Carson, R. (1994). Individual task proficiency and team process: What's important for team functioning? ***Military Psychology,*** 6(3): 177–92.

Tangirala, S., Green, S.G., & Ramanujam, R. (2007). In the shadow of the boss's boss: Effects of supervisors' upward exchange relationships on employees. ***Journal of Applied Psychology***, 92(2): 309-320.

Thibaut, J. W., & Kelley, H. H. (1959). ***The social psychology of groups***. New York: Wiley.

Tiedens, L. Z., & Fragale, A. R. (2003). Power moves: Complementarity in dominant and submissive nonverbal behavior. ***Journal of Personality and Social Psychology,*** 84:, 558-568.

Urban, J.M., Bowers, C.A., Monday, S.D., & Morgan, B.B. Jr. (1995). Workload, team structure and communication in team performance. ***Military Psychology***, 7(2): 123-139.

Van den Bos, K. (2001). Fundamental research by means of laboratory experiments is essential for a better understanding of organizational justice. ***Journal of Vocational Behavior***, 58: 254–259.

West, M.A. (1990). The social psychology of innovation in groups. M.A. West & J. L Farr (Eds.) Innovation and creativity in work: ***Psychological and Organizational Strategies***: 309-333. London: Wiley.

Wiggins, J. S. (1979). A psychological taxonomy of trait-descriptive terms: The interpersonal domain. ***Journal of Personality and Social Psychology***, *37*: 395–412.

Winquist, J. R., & Larson, J. R. (1998). Information pooling: When it impacts group decision making. ***Journal of Personality and Social Psychology***, 74: 371–377.

Yukl, G., & Falbe, C.M. (1990). Influence tactics and objectives in upwards, downward and lateral influence attempts. ***Journal of Applied Psychology***, 75: 132-140.

Yukl, G., Tracey, J.B. (1992). Consequences of influence tactics used with subordinates, peers and the boss. ***Journal of Applied Psychology***, 77: 525-535.

Yukl, G., Falbe, C.M., & Youn, J.Y. (1993). Patterns of influence behavior managers. ***Group and Organization Management***, 18: 5-28.

TABLE 1

Coefficient estimates for regression analyses (Study 3)

	Open communication			Team performance		
	B (SE)	*beta*	*t*	*B (SE)*	*beta*	*t*
Leader Power (1=high leader power, 0=control)	-1.18 (.27)	-.62	-4.38***			
Instrumentality of team members (1=yes, 0=no)	.75 (.26)	.39	2.85**			
Power x instrumentality	1.19 (.38)	.54	3.16**			
R^2			.68			
Leader Power				-.06 (.22)	-.06	-.29
Open communication (mean centered)				.32 (.12)	.62	2.69*
Instrumentality of team members				-.39 (.21)	-.39	-1.85
Power x instrumentality				.23 (.27)	.20	.87
Open communication x instrumentality				.47 (.25)	.40	1.90
R^2						.60

Notes: *** $p<.001$, ** $p<.01$, * $p<.05$

TABLE 2

Analysis of simple effects (Study 3)

Moderator:	Stage		Effect		
Instrumentality of team members	First	Second	Direct	Indirect	Total
No (0)	-1.18*	0.32*	-.06	-.38*	-.45*
Yes (1)	0.01	0.79*	0.17	0.01	.18

Notes: * $p<.05$.

FIGURE 1

Mediated Path, Study 2

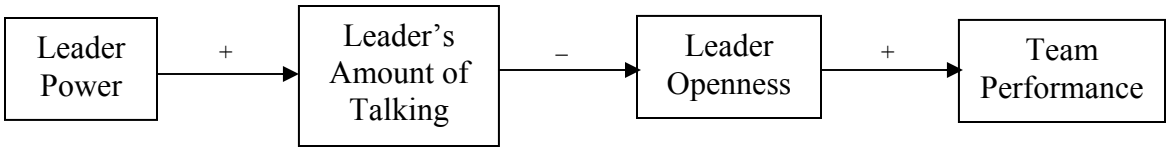
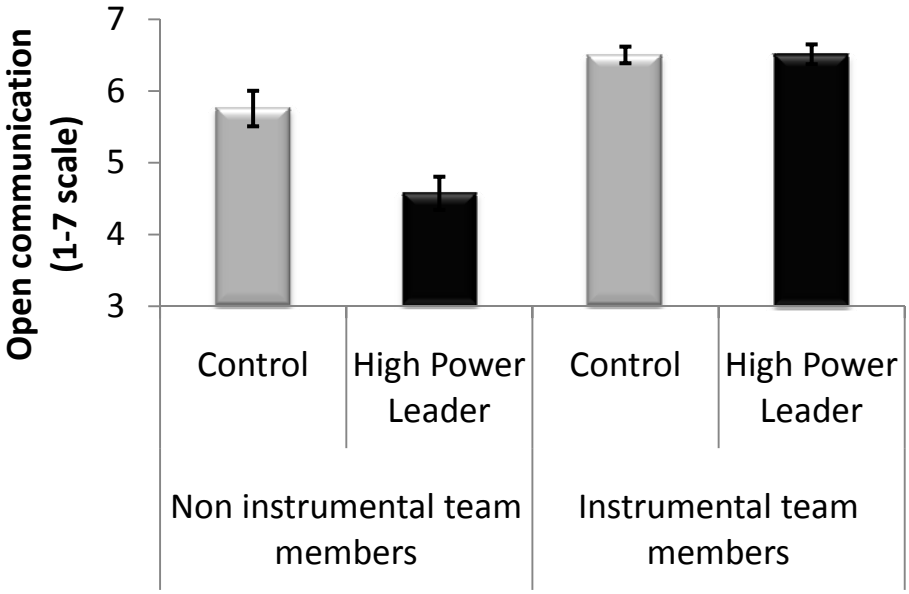


FIGURE 2

Open communication ratings by condition, Study 3



Note: Error bars represent standard errors