When Managers Become Leaders: The Role of Manager Network Centralities, Social Power, and Followers' Perception of Leadership

CHIA-YEN (CHAD) CHIU
Center for Workplace Excellence
School of Management
University of South Australia
EM4-26 Elton Mayo Building
Adelaide, SA 5000, Australia
Email: Chad.Chiu@unisa.edu.au

PRASAD BALKUNDI
Department of Organization and Human Resources
School of Management
State University of New York at Buffalo
274 Jacobs Management Center
Buffalo, NY, 14260-4000
Email: balkundi@buffalo.edu

FRANKIE WEINBERG
College of Business
Loyola University New Orleans
6363 St. Charles Ave., Box 15
New Orleans, Louisiana 70118
Email: weinberg@loyno.edu

This paper has been accepted by Leadership Quarterly

When Managers Become Leaders: The Role of Manager Network Centralities, Social Power, and Followers' Perception of Leadership

Abstract

We explore how formal managers' centralities in both positive and negative networks predict followers' perceptions of their leadership. By incorporating social networks and social ledger theory with implicit leadership theories (ILTs), we hypothesize that formally assigned group leaders (managers) who have more positive advice ties and fewer negative avoidance ties are more likely to be recognized as leaders by their followers. Further, we posit that managers' informal networks bring them greater social power, an important attribute differentiating leaders from non-leaders. We conducted two survey-based studies in student and field teams to test the hypotheses. Based on nested data in both studies, we found support for our hypotheses. These results remain robust across the two studies even though they used different designs (cross-sectional versus longitudinal), different samples (field versus students) across different countries (United States versus India), and a host of control variables at both the leader and follower levels. We find that managers who are central in the advice network are socially powerful and are seen as leaders by individual followers. In contrast, managers who are avoided by followers lack informal social power are not seen as leaders. We conclude by discussing the theoretical and practical implications of our findings and the ways in which our theory and results extend ILTs and social network theory.

Keywords: implicit leadership theories, social network, social power, team leadership

Subordinates' perceptions of their managers matter. Prior research finds that when followers perceive their manager as a leader, they tend to be more committed to the organization, more willing to comply with their manager's requests (De Luque, Washburn, Waldman, & House, 2008), and have greater job satisfaction (Epitropaki & Martin, 2004), resulting in better follower performance (Lord & Maher, 1991). However, what is less understood is the social-contextual process through which some managers tend to be acknowledged as leaders by their subordinates whereas other managers are not, even when both types of managers may have the same level of authority to reward and punish their staff.

Prior studies have drawn on implicit leadership theories (ILTs; Lord, Foti, & De Vader, 1984; Lord & Maher, 1991) to explore and understand this phenomenon through the dyadic relationships between managers and subordinates. ILTs suggest that followers' perceptions of a target individual (e.g., the formally assigned group leader or manager[1]) help them categorize the target as a leader or non-leader (Shondrick, Dinh, & Lord, 2010). When followers perceive that the unique characteristics of their manager fit their own pre-existing schemata for leader prototypes (e.g., being competent and sociable), the manager will more likely be seen as a leader than a non-leader (Epitropaki, Sy, Martin, Tram-Quon, & Topakas, 2013; Geys, 2014).

Whereas conventional studies assume the stability and generalizability of leadership prototypes across individuals (e.g., Den Harton, House, Hanges, Ruiz-Quintanilla, Dorfman, & et al., 1999), others posit that these prototypes are not fixed but rather are contextually sensitive (e.g., Philips, 1984; Philips & Lord, 1982; Sparrowe, 2014). More so, the exact nature of the context—more specifically, the social context around a manager and its role in leadership

[1] We use the term *manager* to refer to a formally assigned leader who is involved in the day-to-day team tasks and is responsible for team performance (e.g., project manager; Morgenson, DeRue, & Karam, 2010). This is to distinguish the leadership attributions followers make about the target (i.e., their manager). Accordingly, in this article we will use terms *manager* and *formal leader* interchangeably.

prototype activation—is not understood, even though understanding this context may offer critical insights into how the prototypes get activated (c.f., Hanges, Lord, & Dickson, 2000; Lord & Shondrick, 2011; Shondrick, Dinh, & Lord, 2010). For example, in order to categorize a manager as a leader or not, followers need to have access to information that may determine whether the prototypes become activated or not (Lord & Shondrick, 2011). One key source of information about managers is their social networks with their followers (Pastor, Meindl, & Mayo, 2002). By understanding how managers' social networks may influence their subordinates' prototype activation, we are able to address a critical gap in understanding how managers become leaders in the eyes of their followers.

There has been a growing body of literature on social networks that can help us understand how subordinates make attributions about leadership (Sparrowe, 2014). Informal relationships serve as conduits through which information flows from one individual to others (Podonly & Baron, 1997). When individuals interact with others, they reveal information about themselves that can help others evaluate them. Therefore, a manager's networks are essentially a medium of self-disclosure that can help subordinates activate their leadership prototypes.

Nevertheless, our knowledge of the relationship between managers' social networks and their followers' leadership perceptions remains limited for two major reasons. First, current network studies place an exclusive emphasis on positive networks (e.g., friendship or advice networks), ignoring the potential role of negative social relationships (e.g., avoidance or hindrance ties; Kilduff & Brass, 2010). As per social ledger theory (Labianca & Brass, 2006), negative ties may be more potent than positive ties in predicting human behaviors and attitudes in organizations. Very few studies have simultaneously explored positive and negative social

networks in general (c.f., Venkataramani, Labianca, & Grosser, 2013), and none has simultaneously examined their joint effects on leadership perception.

Second, the processes by which both positive and negative networks influence perceptions are not well understood. More specifically, a manager's network position may serve as a heuristic that helps followers make attributions about the manager (Phillips, 1984; Phillips & Lord, 1982). However, the precise network-triggered mechanisms by which leadership prototypes are activated in subordinates are not well understood (c.f., Hanges, Lord, & Dickson, 2000; Lord & Shondrick, 2011; Shondrick, Dinh, & Lord, 2010). We propose that social networks provide a signal about managers' influence and power that helps followers see them as leaders or not. Therefore, we propose and test for the role of networks and the mechanisms through which these networks influence prototype activation.

In summary, we draw on both the social network approach and ILTs to answer how and why some managers are acknowledged as leaders by their subordinates while others are not. We posit that informal network positions in both positive and negative networks serve as heuristics that may trigger the categorization of managers as leaders. A manager's positive and negative network centralities—the number of incoming positive and negative ties—are expected to predict the extent to which followers classify the manager as a leader (Zaccaro, 2007). Because leadership qualities are strongly embedded in followers' subjective assessments and are "imagined or constructed by followers" (Meindl, 1995, p. 331), the nature of leader-follower relationships (either positive or negative) could affect how followers judge their manager and thus influence their leadership perceptions. Also, we hypothesize and test a potential mechanism to explain how the central positions of managers could activate the leadership categorization process: A manager's network centrality is expected to be associated with the level of his or her

social power (Brass & Krackhardt, 1999), and we anticipate that social power generates favorable attributions about the manager (Burkhardt & Brass, 1990). Because social power is critical for distinguishing leaders in a group (Ferris, Liden, Munyon, Summers, Basik, & Buckley, 2009), followers may be more likely to categorize a socially powerful manager as a leader (Epitropaki & Martin, 2004).

To test our theory, we conducted two complementary studies to examine relationships among manager centrality in positive and negative networks, social power, and perception of leadership. In Study 1, we use a longitudinal design in a student sample to examine whether a formal leader's positive and negative network centralities predict subsequent follower perceptions of leadership. We control for followers' initial perceptions of leadership as well as for several prototypical relevant leadership characteristics (e.g., demographics, personality, and cognitive ability). In Study 2, drawing on a field sample of working teams, we test whether managers' social power acts as a mediator in the relationship between their network centralities and follower perceptions of leadership. We also rule out several alterative explanations, including a manager's connections to other managers and to his or her own supervisor.

We make three contributions to current understanding of leadership. First, by integrating the social network perspective with ILTs, we offer both theoretical and empirical support to explain how social network positions of managers serve as heuristics that trigger the activation of representative leadership. Second, drawing on social ledger theory (Labianca & Brass, 2006), we extend our understanding of the role of social networks to both positive and negative ties as predictors of leadership prototype activation. Third, we propose that social power is the mechanism by which followers view their managers as leaders—the mechanism that captures the encoding process of leadership categorization. We increase current understanding of leadership

by clarifying the contributing role that managers' social network positions and social power have on follower classifications of leadership.

Theory and Hypotheses

Leadership Perception in Organizations

When perceived as leaders, managers are more likely to have positive evaluations, build constructive relationships with followers, and access more resources, all of which benefit manager performance (Lord & Maher, 1991). Followers also benefit when they perceive their managers as leaders. Several empirical studies have reported that when followers perceive their managers as leaders, followers exhibit higher organizational commitment, job satisfaction, and well-being (Epitropaki & Martin, 2004) as well as greater willingness to engage in extra-role behaviors outside of their formal duties, resulting in higher overall organizational performance (De Luque et al., 2008).

But what predicts such leadership perception? Previous research has conceptualized that leadership perception is based on followers' sense-making processes and that the activation of leadership perception is determined by followers' interpretation of their managers' characteristics, behaviors, and work outcomes (Lord & Maher, 1991). Lord and associates (Lord et al., 1984; Lord, Foti, & Phillips, 1982) posit that followers have pre-existing conceptions of leadership schemata through which they form cognitive conceptions of leadership. When a manager interacts with followers, leadership perception is activated through followers' "encoding and retrieval of leader-relevant information," which followers use as a basis to categorize individuals into leader or non-leader categories (Shondrick et al., 2010, p. 959). If a manager's traits strongly match a follower's expectation of prototypical leadership, the manager is likely categorized as a leader by that follower. For example, managers who are intelligent and

extroverted tend to be perceived as leaders, as these personal attributes represent typical leadership prototypes (cf. Antonakis, 2011; Judge, Bono, Ilies, & Gerhardt, 2002; Judge, Colbert, & Ilies, 2004).

However, because followers' subjective assessments construct leadership perception, the perception could vary across followers and contexts (Foti et al., 2012; Hanges et al., 2000). One such relevant social context is managers' social ties with their followers. For followers, informal social connections to their manager may serve as one medium through which they observe and attribute leadership qualities to their manager (Balkundi et al., 2011). In their seminal publication on leadership perception, Lord and Maher (1991) emphasize the importance of social interactions: "Leadership usually involves face-to-face contact with subordinates, either individually (dyadic leadership) or in small groups. At this level, leadership perceptions are highly dependent on these face-to-face processes" (p. 9). DeRue and Ashford (2010) build on this idea by proposing that frequent leader-follower interactions provide more opportunities to observe leadership attributes but also foster and solidify leader identity via constant leadership role-claiming and role-granting acts. That is, through social interactions, an individual can claim his or her leadership role by displaying behaviors such as providing advice, after which followers grant her a leadership identity by accepting the advice. Over time, leadership identity becomes internalized by the manager and is further recognized by followers, which promotes the followers' leadership perceptions.

In accordance with this social construction–based approach to leadership perception, we argue that in addition to a manager's personal characteristics, his or her social network position in a group could also bring salient contributions to his or her leadership image. To build this case, we draw on and extend literature that has reported a positive association between leader

network centrality and the activation of leadership perception (Balkundi & Kilduff, 2005; Ibarra & Andrews, 1993). However, social networks include both positive and negative relationships (Labianca & Brass, 2006). Although a formal leader may have positive relationships that bring some social benefits, her negative relationships could generate social liabilities that negatively influence perceived leadership. In the following section, we build the case that positive and negative centralities simultaneously impact followers' perceptions of their managers' leadership.

Effects of Leaders' Positive and Negative Centrality on Leadership Perception

Although the literature to date has established a series of well-documented benefits of leader centrality in positive networks (for a meta-analysis, see Balkundi & Harrison, 2006), being central in a negative network, such as a dislike network or an avoidance network, may have drawbacks that could offset the benefits associated with positive network centrality. Social ledger theory (Labianca & Brass, 2006) suggests that social networks include both positive ties (such as friendship or advice-seeking) and negative ties (such as avoidance) and that both types of social networks uniquely and simultaneously influence individuals' attitudes, perceptions, and reactions. Positive ties may bring social resources, but a manager's negative ties can cause followers to withhold information from her or even sabotage her (cf. Venkataramani, Labianca, & Grosser, 2013). Therefore, a discussion of managers' network positions and leadership perception must consider both positive and negative relationships.

Building on social ledger theory, we argue that it is important to consider the positive and negative ties within a single conceptual model for two primary reasons. First, whereas centrality in positive networks would make a formal leader more accessible to followers and increase opportunities to be perceived as a leader, leader centrality in negative networks would mean a manager is socially ostracized and would thus diminish her perceived leadership qualities.

Second, negative ties are suggested to be more potent in organizations, even though they occur less frequently than positive ties (Rook, 1984). Incorporating both aspects of social networks—positive and negative—should offer a more comprehensive view of the impact of network centrality in the implicit leadership process.

We believe that managers who are central in the positive network receive favorable leadership attributions from their subordinates for multiple reasons. First, when a formal leader occupies this advantageous position in her positive network, many followers approach her for task-related support. By providing instant and necessary assistance to followers, a centrally leader demonstrates her work competence and contribution to the group (Balkundi et al., 2011).

Second, through frequent leader-follower interactions, other leader-like attributes, such as supportiveness (Hamblin, 1958), may be easily observed and recalled by followers (Neubert & Taggar, 2004). Accordingly, this advantageous social position thus grant the manager with unique leadership qualities of being competent and supportive (Richardson, Dale, & Marsh, 2014). Since prototypical implicit leadership theories include traits such as competence and supportiveness (Epitropaki & Martin, 2004; Lord et al., 1984), the observations of these important characteristics would better promote the categorization of the manager as a leader.

Third, from a social capital standpoint, maintaining more social ties means that the formal leader can leverage her social connections to obtain more resources, such as key but short-lived information. This improves her capacity to integrate different information and provide useful and customized advice, enabling her leadership role to become even more widely recognized and valued (Venkataramani et al., 2013). Overall, whether managers are prompt in helping or provide solutions that seem creative and relevant, followers have the opportunity to

see their manager as competent and supportive (Epitropaki & Martin, 2004; Lord et al., 1984). Therefore, followers are more likely to categorize the manager as a leader.

> *Hypothesis 1 (H1): Managers' in-degree centrality in a positive network is positively related to their leadership perception*.

On the other hand, a manager with many negative connections to followers, such as avoidance ties (Venkataramani & Dalal, 2007), is likely to be categorized as a non-leader by their followers. Previous research has suggested that the level of social inclusion and acceptance greatly determine leadership perception (Hollander, 2012). By definition, those who have high in-degree centrality in a negative network are socially ostracized by others in the network (Grosser, Sterling, Scott, & Labianca, 2010). These ostracized individuals are typically excluded socially and aren't often given direct access to instant and important information that others may be sharing (Ellwardt, Labianca, & Wittek, 2012). As such, a manager who is negatively associated with followers would be socially excluded by them, meaning that she would lack opportunities to showcase important leadership qualities (Balkundi et al., 2011), thus making it less likely that their followers would categorize her as a leader. More importantly, when followers tend to avoid their manager, they become reluctant to provide social and task-related support to her, and this discord is more likely to generate counterproductive workplace behaviors (Venkataramani & Dalal, 2007). When observing these negative outcomes, followers attribute group dysfunction to failure of leadership (Lord & Maher, 1991), eventually resulting in disrespect toward and further devaluing of the manager (Venkataramani et al., 2013).

We expect that a manager's centrality in negative networks could seriously hamper his or her leadership image, even in instances when that manager is central in the advice network, as previously posited. When a manager is avoided by his or her followers, the manager's essential leadership traits, such as intelligence or extroversion, could be ignored or misinterpreted due to

the negative manager-follower relationships, causing followers to underestimate the manager's leadership qualities.

> *Hypothesis 2 (H2): Managers' in-degree centrality in negative networks is negatively related to their leadership perception.*

Network Centralities and Leadership Perception: Social Power as a Mediator

The key assumption in the prior two hypotheses is that followers have more opportunities to understand their manager and make attributions about her leadership qualities when they have frequent interactions. However, merely having extra opportunities to observe a manager does not guarantee that followers will perceive her to fit their expectations of quality leadership. What is less understood is what followers see in their managers that helps with the leadership categorization (Hollander, 2012). One feature commonly associated with leaders is influence, or social power (Hinkin & Schriesheim, 1989), and therefore a manager's level of informal social power may play a role in determining leadership in the eyes of followers (Ferris et al., 2009).

To understand managers' informal social network positions and how the positions may serve as signals of power, we draw on French and Raven's (1959) five-factor model to explicate the connection. According to French and Raven, there are five types of power: *reward power*, an individual's personal ability to reward others; *coercive power*, the ability to penalize noncompliance; *legitimate power*, the ability to command compliance or responsibility (Hinkin & Schriesheim, 1989); *expert power*, the ability to be seen as the most competent; and *referent power*, derived from being identified with and likable. However, not all five power types are relevant to our understanding of networks and their role in shaping leadership perception. Expert power and referent power have also been jointly labeled *informal social power* (c.f., Hinkin & Schriesheim, 1989) and are accordingly the two bases that are most relevant to informal social

relationships. In contrast, formal *position power*[2], or a formal leader's reward, coercive, and legitimate power, are based on the leader's formal organizational standing.

Prior research has suggested that network position is a source of informal influence (Brass & Burkhardt, 1993). For example, when managers are central in advice networks, several followers come to them for advice. During these interactions, followers begin to further recognize the manager's unique expertise and overall likability. By providing advice to some followers, the manager gains access to information from those individuals that he or she can then pass along as valuable information to other followers (c.f., Brass, 1984; Sparrowe & Liden, 2005). Further, by providing technical advice, central managers help subordinates solve problems, a type of support that has been shown to positively influence the degree to which a subordinate likes and admires his or her manager. Additionally, by seeking advice from their manager, followers begin to recognize their manager's technical strengths (Ellwardt, Wittek, & Wieler, 2012). That is, in the eyes of their followers, managers with several incoming advice ties are seen as having social power.

Conversely, when a manager is avoided by his or her followers, not only do the manager's unique abilities often remain unknown, but the absence of these perceived strengths may also contribute to the manager being seen in a negative light. In this scenario, the reluctance of followers to interact with their manager hinders their recognition of his or her influence (Balkundi & Kilduff, 2006) and social status (Ellwardt, Labianca, & Wittek, 2012). Because socially distant individuals are usually seen as less dependable (cf. Salmivalli, Lagerspetz,

[2] This reclassification of the five types of power into two larger dimensions has been empirically validated (Rahim, 1989; Rahim, Antonioni, & Psenicka, 2001; Yukl & Falbe, 1991).

Bjorkqvist, Osterman, & Kaukiainen, 1996) and less likable, such a manager would be less likely seen as socially powerful, despite any formal power granted by the organization.

> *Hypothesis 3 (H3): Managers' in-degree centrality in a positive network is positively related to their social power*.

> *Hypothesis 4 (H4): Managers' in-degree centrality in a negative network is negatively related to their social power*.

Overall, a manager's positive and negative ties act as lenses through which their social power is recognized by followers. This social power serves as a heuristic of leadership status that enables followers to acknowledge and make determinations regarding leadership claims. A manager's high social power provides followers with key information and signals whether she is knowledgeable and likable, which in turn reflects several prototypical leadership qualities, such intelligence or charisma (Epitropaki & Martin, 2004; Lord et al., 1984). Managers who are central in the advice network possess expert power, and their reputations as experts make strong impressions on followers, such that followers become primed to view them as competent and knowledgeable leaders (Foti, Knee, & Backert, 2008). In addition, managers central in the advice network also have referent power that confers acceptance and approval (Foti et al., 2008; Hinken & Schriesheim, 1989), meeting followers' leadership expectations (Popper & Mayseless, 2003). In contrast, managers who have low advice centrality or are avoided by their followers tend to have followers who are unable to recognize their managers' strengths and accordingly perceive them as less influential and powerful. Thus, such managers are less likely to be considered leaders. Thus,

> *Hypothesis 5 (H5): Managers' social power mediates the relationship between manager centrality in (a) positive and (b) negative networks and followers' leadership perceptions.*

We conducted two complementary studies to test our five hypotheses. The first study used a longitudinal design in a student sample to establish that a formal leader's network centrality predicts leadership perception (H1 and H2). The second study replicated the first study's results and further tested the mediating role of a leader's social power in a cross-sectional field study of teams (H1 to H5).

Study 1

Method

Participants. We conducted a two-wave survey at a public southwestern U.S. university. Participants were 356 college students in a 16-week senior-level strategy course. They had been randomly assigned to 79 four- or five-person teams (median team size of four) for an organizational simulation game in which the team ran a fictitious airline company (Smith & Golden, 1987). As with other studies that used the simulation *Airline: A Strategic Management Simulation* (e.g., Lemke & Schminke, 1991), in our study the students participated in the simulation over an entire semester. Each student team was required to jointly solve multiple problems across different functional areas including marketing, human resources, operation, and finance for the fictional company. In addition to the simulation, teams submitted multiple case studies requiring team collaboration. Most of the participants were male (72.5%), and the mean age was 23 years old. The class instructor assigned one team member in each team to be a formal leader, responsible for coordinating team activities and delivering the instructor's informal feedback to the team. Therefore, these participants played the role of project managers, which corresponds to the definition of formal or internal leaders in work teams (Morgeson et al., 2010).

Procedure and sample. The first wave of data collection, referred to as Time 1 (T1), was conducted in the second month of the semester; therefore, participants had at least one month to

build interpersonal relationships and observe the leadership qualities of their formal group leaders. In T1, we collected intragroup advice and avoidance networks, team leaders' self-reported Big Five personality traits (leader level: L2), and followers' initial leadership perceptions (follower level: L1). About two months later, in the second wave of data collection, referred to as Time 2 (T2), followers were asked to again report their leadership perceptions (L1) of their formal group leader by using the same scale that was used at T1. Further, we collected participants' personal information from university records, such as demographics, SAT scores, and cumulative GPA (L1).

After the two-wave data collection, we dropped eight teams from the study because of missing data in either of the waves. Additionally, social network analysis requires at least 80% response rates within the teams (Sparrowe, Liden, Wayne, & Kraimer, 2001), so we dropped eight more teams because of low within-team response rates. As a result, the final sample included 192 followers and 63 leaders from 63 teams, with a response rate of at least 80% across the two waves. A series of *t*-tests suggests that the dropped teams were not significantly different from the retained teams in terms of team member background characteristics such as sex, GPA, and SAT scores.

Team leaders' positive network centrality (L2). To measure formal leaders' positive network centrality, we provided a full list of team members, including the formal leader, to each member of the team and asked them to identify members from whom they sought advice about project-related matters. From these data, we used UCINET to compute each leader's in-degree centrality in the team advice network, defined as the total number of advice nominations that the formal leader received from team members (Borgatti & Everett, 2006). Also, to control for team

size, we standardized the scores by team size; thus the centrality scores ranged from 0 to 100% (i.e., normalized in-degree centrality; Wasserman & Faust, 1994).

Team leaders' negative network centrality (L2). Following previous studies of negative networks (e.g., Xia, Yuan, & Gay, 2009; Yuan, Carboni, & Ehrlich, 2014), we measured negative ties by asking all participants to identify team members with whom they tried to avoid having contact (e.g., Venkataramani et al., 2013). Again, we computed each team leader's normalized in-degree centrality in the avoidance network.

Leadership perception (L1). In both waves, the seven-item General Leadership Impression (GLI; Foti et al., 2008; Lord et al., 1984) was used to assess the degrees to which followers viewed their formally assigned leader as a leader (i.e., leadership perception; Cronshaw & Lord, 1987). The five-point Likert-type scale ranged from 1 (*strongly disagree or nothing*) to 5 (*strongly agree or extreme amount*) and included questions such as "To what degree does your leader fit your image of a leader?" and "What amount of leadership does your team leader exhibit". The scale was reliable, with a Cronbach's alpha of .94.

Control variables. We included several control variables at both the leader and follower levels (L2 and L1). In order to better capture the magnitude of leader network centralities on leadership perception at T2, we controlled for followers' leadership perceptions at the prior data collection wave (L1.T1). Also, we controlled for the sex of both leaders and followers because multiple studies have reported the impact of sex on leadership perception and effectiveness (Ayman & Korabik, 2010; Eagly & Carli, 2003; Eagly & Johnson, 1990). Because the cognitive abilities of both leaders and followers influence leadership conceptualization processes, we included all participants' cumulative GPA and SAT scores (Foti & Hauenstein, 2007). Further, we controlled for leaders' personality, because multiple meta-analyses have indicated

associations between leadership perception and leader personality (Judge et al., 2002; Lord, De Vader, & Alliger, 1986). We used Goldberg's (1992) 50-item Big Five markers to measure leaders' personalities. Team leaders self-reported their Big Five personality traits based on a five-point Likert-type scale from 1 (*strongly disagree or nothing*) to 5 (*strongly agree or extreme amount*). These items were designed to measure five personality factors (10 items for each factor): contentiousness, agreeableness, emotional stability, extroversion, and openness or intellect (Soubelet & Salthouse, 2011). The reliability of the five personality dimensions ranged from .86 to .90, and overall reliability across the 50 items was .88.

Analysis

We proposed that team leader positive and negative centrality (L2) would predict followers' perceptions of leadership (L1). Because we had nested data, we needed to test whether HLM was the appropriate statistical method (Raudenbush & Bryk, 2002). We calculated the intra-class correlation coefficient (ICC) for the null model; the result suggested that about 18% (ICC = .18) of the variance of perceived leadership can be explained by between-group (L2) variables, thus confirming the appropriateness of using HLM to test our hypotheses (Zhang, Waldman, & Wang, 2012). We used step-wise HLM procedures to test this cross-level model (Aguinis, Gottfredson, & Culpepper, 2013). That is, we performed HLM analyses on the main effects by adding L1 and L2 controls first, and then we introduced the predictors. Table 2 shows the unstandardized parameter estimates, standard errors, and results of hypothesis tests. We used pseudo R^2, which is the percentage of the total variance in the dependent variable predicted by the variables in the respective models (Snijders & Bosker, 1999), to estimate the effect size of each proposed model. We also used the OLS-based R^2 to estimate the change of effect size of the models. Although adopting OLS-based R^2 may appear on the surface to violate the multilevel

nature of the data, it should offer an unbiased assessment of the change of percentage of explained variance from model to model (Zhang et al., 2012).

Results and Discussion

Table 1 shows a summary of descriptive statistics. A preliminary check of the correlation coefficients reveals that perceived leadership was significantly related to team leader centrality in the advice network (r = .22, p < .01) but not in the avoidance network (r = –.08, *ns*).

Insert Table 1 Here

Recall that we had hypothesized that team leader positive (H1) and negative (H2) centrality predict followers' leadership perceptions. The results of HLM analyses support our hypotheses: Formal leader positive centrality predicted perceived prototypical leadership (γ = .01, SE = .00, p < .01), whereas formal leader negative centrality was negatively associated with prototypical leadership (γ = –.01, SE = .00, p < .01). Thus, both H1 and H2 were supported.

Insert Table 2 Here

Summary

First, Study 1 established that formal leaders' positive and negative network centralities predicted how subordinates perceive formal leaders. Second, we found these effects even after controlling for key alternative explanations, including leader personality (Big Five), SAT score, and cumulative GPA. Third, and more importantly, we find this effect even after controlling the initial leadership impression (T1). Thus, temporal separation and ruling out alternative explanations increase the internal validity of our study and the overall confidence in our findings. However, Study 1 was based on a student sample. Although the team leaders were formally assigned, they lacked formal powers to punish or reward followers. Therefore, the

generalizability of these findings remains questionable. Also, we did not test for social power in the nomological network in Study 1 (H3, H4, and H5). Accordingly, a number of questions still remain: How would these results translate in formal work teams in which managers have formal powers to reward and punish subordinates? In work teams with actual managers, how do network positions translate into leadership cognitions about the formal authority figure? Put another way, is social power the mechanism through which network ties impact followers' perceptions of a manager? To address these questions, we conducted Study 2.

Study 2

Method

Participants. In Study 2, we collected data from members of work teams in four organizations—three in south India and one in the United States. The three Indian organizations were a regional hospital, a pharmaceutical laboratory, and a research institute funded by the Indian government. Participants from the hospital were in medical diagnostic or treatment teams or in hospital administration teams. Participants from the pharmaceutical lab were in drug research and development (R&D) teams or in drug manufacturing teams. Participants from the government-based research institute were in teams focused on national policies dealing with nutrition and health. The U.S. participants were engineering students from a large state university participating in applied field projects sponsored by a large aerospace company. Formally designated leaders (project managers) supervised the Indian and U.S. teams.

Procedure and sample. We collected data from the four organizations using surveys containing items on social networks, manager power, perceived prototypical leadership, and demographic variables for group members. We first sent letters describing the general purpose of the study, encouraging participation, ensuring complete confidentiality, and emphasizing the

study's practical importance. We then sent each participant a package including the survey and a cover letter. We promised participants and their corporate sponsors a written summary of the findings. Across the four organizations, 472 people agreed to participate: 403 followers and 69 managers organized into 69 work teams, yielding an average response rate of 82% across teams. This is within the limits of past network research (Bowler & Brass, 2006). We excluded 11 teams that had only two members and excluded 8 teams with missing values on the mediating and dependent variables. A series of *t*-tests showed that the excluded individuals from the final sample were not significantly different from those retained in terms of demographic variables, including age, sex, and education. The final sample contained 254 followers and 50 managers in 50 teams, with an average team size of 6 members and with team size ranging from 3 to 8 members. Of the 50 teams, 18 were from the regional hospital, 10 were from the pharmaceutical lab, 7 were from the research institute, and 15 were from the applied field project.

Managers' positive and negative centrality. As with Study 1, in Study 2 we measured managers' centrality in their advice and avoidance networks. To measure advice and avoidance networks, we provided an alphabetical list of all team members, including the manager, and asked members to identify the names of the people from whom they seek advice about work-related matters (advice network) and the people they try to avoid in the workplace (avoidance network). As in Study 1, we used normalized in-degree centrality for both networks.

Managers' social power. We used an eight-item scale (Hinkin & Schriesheim, 1989) to assess followers' perceptions of managers' informal social power. Sample scale items include "My manager can give me good technical suggestions" (expert power) and "My manager can make me feel like he or she approves of me" (referent power). The subordinates completed these items by keeping their manager as the referent. Cronbach's alpha value for the eight items was

.91. We also performed a second-order (leader social power) confirmatory factor analysis (CFA) to ensure the convergent validity of the scale, and the model fit indices all yielded a satisfactory level (χ^2 = 80.26, *df* = 19, *p* < .01; SRMR = .04; CFI = .95; TLI = .92).

Because social power was viewed as an L2 construct, we tested whether aggregation was justifiable. We examined three aggregation statistics, including one intragroup agreement index (R_{wg}; James, Demaree, & Wolf, 1993) and two inter-rater reliability indices (ICC1 and ICC2; Bliese, 2000). All three indices supported the aggregation to the leader level (L2) (mean r_{wg} = .91; ICC1 = .24; ICC2 = .66), and the *F*-test showed significant between-group variance (*F* = 2.95, *p* < .01). Since these values are all within acceptable levels for aggregation (e.g., Chen, Kirkman, Kanfer, Allen, & Rosen, 2007; Gong, Law, Chang, & Xin, 2009), we used the average of ratings among followers for leaders' social power.

Leadership perception (L1). As in Study 1, we used the GLI scale (Foti et al., 2008) to measure followers' perceptions of leadership. Scale reliability (as per Cronbach's alpha) was .87.

Control variables. Because organizations may vary in the level of formal power they give a manager, we controlled for this using a 12-item scale (Hinkin & Schriesheim, 1989). Sample scale items include "My manager can make me feel that I have responsibilities to fulfill" (legitimate power), "My manager is able to increase my pay level" (reward power), and "My manager is able to give me undesirable job assignments" (coercive power). Cronbach's alpha for the scale was .68, and the CFA result for the second-order model showed a good fit (χ^2 = 113.52, *df* = 51, *p* < .01; SRMR = .05; CFI = .94; TLI = .92). All three aggregation statistics supported averaging the scores to the L2 (mean r_{wg} = .90; ICC1 = 16; ICC2 = .53; *F* = 2.15, *p* < .01).

Also, because a manager's social power could also be determined by his or her relationships with colleagues (i.e., other managers) and supervisors, we controlled for both of

these alternative explanations. First, we provided lists of the names of all managers in each organization and asked each of them to identify whom they asked for advice about work-related matters (advice network), and then we controlled for their normalized in-degree advice centrality among managers; that is, we controlled for a manager's technical reputation among peers (other managers; Mehra, Dixon, Brass, & Robertson, 2006). Second, classic leadership literature provides evidence to suggest that managers' relationships with their own bosses may influence how the managers' followers view them (Katz & Kahn, 1978; Pelz, 1952). Therefore, we also contacted managers' immediate supervisors to know whether the supervisors regularly seek advice from any of the managers they supervise (1 = yes; 0 = no) and thereby controlled for the managers' connections to the higher level of their organizations (e.g., Erdogan & Enders, 2007; Goodwin, Bowler, & Whittington, 2009; Zhou et al., 2012).

Other L1 and L2 variables were also included as control variables. At L1, we included the followers' sex (male = 1, female = 2), age, education, and team tenure as control variables. At L2, we controlled for manager's age, education, and sex (male = 1, female = 2), as managers' demographic factors have been found to be significantly related to subordinates' perceptions of leadership (Howard & Bray, 1988; Judge & Cable, 2004). Finally, in this study we collected data from both India and the United States. To control for the possible cultural impacts, we created a dummy code for the organization type (1 = U.S. company; 0 = Indian organizations).

Analytical Procedure

In addition to H1 and H2 that we tested in Study 1, in Study 2 we tested three additional hypotheses: the association between manager centrality and social power (H3 and H4) and the mediation effects of manager social power (H5). To examine the mediation relationship, we followed the two-step procedure recommended by Takeuchi, Chen, and Lepak (2009). First, we

employed OLS regression to examine the relationship between manager centrality and social power (both at L2; H3 and H4). Second, we adopted HLM analyses to test whether manager centrality (L2) and social power (L2) predict perceptions of leadership (L1). The ICC value of the null model is .37, which indicates that about 37% of variance can be explained by L2 predictors. Thus, it is appropriate to use HLM to test the proposed relationships in Study 2 (Raudenbush & Bryk, 2002). Following this procedure, the mediation effects are significant when the following criteria are met: (a) the independent variables (manager positive and negative centrality) are significantly related to the outcome variable (leadership perception), (b) the independent variables are significantly related to the mediator (social power), and (c) when both the independent variable and mediator are included in the model, the mediator still predicts the outcome variable, whereas the independent variable becomes less significant (Takeuchi et al., 2009). We used the Monte Carlo method to estimate the confidence intervals for the multilevel mediation relationship (Preacher, Zyphur, & Zhang, 2010; Zhou, Wang, Chen, & Shi, 2012).

Results and Discussion

Table 3 provides the means, standard deviations, correlations, and reliabilities for all L2 and L1 variables. The correlation coefficients provided a preliminary check for our hypothesized relationships: Informal social power was correlated with positive network centrality (r = .46, p < .01) and marginally associated with negative network centrality (r = –.24, p < .10) at L2. At L1, leadership perception was significantly associated with both manager's advice (r = .23, p < .01) and avoidance network centrality (r = –.30, p < .01) as well as the manager's social power (r = .52, p < .01).

Insert Table 3 Here

We examined the association between managers' centralities and social power by using OLS regression (H3 and H4). As we predicted, manager centrality in the positive network was significantly and positively related to manager social power (b = .01, SE = .00, p < .05), while manager centrality in avoidance ties had a negative effect (b = –.03, SE = .02, p < .05; see Table 4). Thus H3 and H4 were supported.

Insert Table 4 Here

We then tested the cross-level mediation of social power on leadership perception by using HLM. We first checked the direct effects of manager network centralities on leadership perception (H1 and H2). Consistent with our conclusion from Study 1, both managers' advice (γ = .01, SE = .00, p < .05) and avoidance centralities (γ = –.05, SE = .02, p < .05; see Model 2 in Table 5) were significantly related to leadership perception. After manager social power was included in the model, it was still correlated to leadership perception (γ = 73, SE = .21, p < .01), whereas the impact of both centralities became insignificant (p > .05; see Model 3 in Table 5). Thus, the mediating effect (H5) was supported and this was full mediation.

We used Monte Carlo simulation to estimate the confidence intervals of the indirect effect (repetitions = 20,000), and in so doing we found the indirect effect for advice centrality → social power → leadership perception to be .004, with a 95% CI of [.001, .009]. The indirect effect for the path of avoidance centrality → social power → leadership perception was –.018, with a 90% CI of [–.041, –.001]. These results suggest that social power has a significant indirect effect for advice centrality (p < .05) and a marginally significant indirect effect for avoidance centrality (p < .10). Accordingly, we found support for H5.

Insert Table 5 Here

Summary

The findings of Study 2 are twofold. First, replicating the findings of Study 1, we found that manager centrality in positive and negative networks predicts leadership perception in work teams. Second, as predicted, managers' positive and negative centralities are related to their social power, and managers' social power mediates the relationship between their network centralities and leadership perception. Overall, managers who were central in the positive network and peripheral in the negative network had high social power, which is associated with higher leadership perception.

General Discussion

We conducted these two studies to better understand the relationship between network position and the activation of leadership perception (e.g., Dinh, Lord, Gardner, Meuser, Liden, & Hu, 2014). The results suggest that managers' positions in informal social networks affect how their followers see them and whether they categorize them as leaders or not. These results remain robust across the two studies even though they used different designs (cross-sectional versus longitudinal), different samples (field versus students), and a host of control variables at both the leader and follower levels.

Across the two studies, we find that followers can socially detect and encode important leadership qualities through manager-follower interactions. Social networks provide the lens through which followers may observe, evaluate, and construct leadership images and impressions of their managers. But what do followers actually see through these interactions that help to generate a positive assessment of leadership quality? Our research suggests that a manager's high social power, triggered by that manager's network centralities, becomes a critical heuristic that enhances perceived leadership qualities in the eyes of followers. Our findings have

multiple implications for the different theories we drew on when developing our theory. In the following section, we outline the contributions of our paper to ILTs and social network theory.

Implications for ILT Literature

Our research conclusions offer insights for the development of ILTs and relevant leadership theories. First, while many ILT-related studies have proposed that implicit leadership prototypes are contextually sensitive (for a review, see Sparrowe, 2014), our research offers a theoretical explanation as well as empirical evidences about how social networks, an important social context factor, serve as a heuristic that activates the categorization of individuals as leaders. For instance, leader categorization theory (Lord et al., 1984) suggests that observers categorize targets as leaders based on how well the targets are perceived to fit a leader prototype. However, studies on how these categorizations come about have typically emphasized the cognitive processes of followers. One of the key explanations about this cognitive process is that followers have prototypes about the objects that they observe, and these prototypes allow individuals to confidently and efficiently fill gaps in memory, as they represent the "most widely shared features of category members" (Phillips, 1984, p. 487; Rosch, 1978). Under this rationale, when a person thinks of a leader, there are a set of characteristics that are associated with the word *leader* (e.g., power) that may serve to activate the entire leader prototype (Hanges et al., 2000). Thus, even if an individual does not observe certain behaviors by the target, the individual may be able to extrapolate attributions based on the behaviors that he or she can observe that relate to the prototype. Following these observations, we posit that a manager's central positions in a team's positive and negative networks are likely to serve as heuristics that help fill missing information. For example, even though followers receive advice from their managers (via their ties to the manager) that can help them make attributions about the manager's intelligence,

dynamism, and dedication, they may not have information about the manager's sensitivity—but they can extrapolate about it based on the three remaining dimensions (c.f., Epitropaki, & Martin, 2004). Thus, the information flowing through these positive and negative ties helps complete the information needed to determine whether to categorize the manager as a leader.

A question remains, however, concerning the network features of managers that tend to be anti-prototypical, such as tyranny (Epitropaki, & Martin, 2004). Even though we did not measure these anti-prototypical perceptions, our theory would suggest that the avoidance networks of managers would be associated with these anti-prototypical leadership attributions. The social distance between managers and followers may bias the followers to magnify the negative behaviors of the manager. Future research needs to explore this dark side of leadership.

The conventional view on prototypical ILTs places a great emphasis on relatively stable traits such as personality or intelligence (e.g., Lord et al., 1986), which might limit the implications of ILTs in organizations because these leadership traits cannot be easily changed or modified. The findings here suggest that leadership prototypes can be activated by network centralities which can be better controlled and developed by individuals; this finding strengthens the significance of applying ILTs to organizational management. Thus, in a practical sense, this study provides an illustration of why ILTs matter for leaders and their organizations. For one, managers may capitalize on the capacity for social networks to influence followers' prototypic information processing. Broadly speaking, by positioning themselves into socially powerful positions within their team's network, team managers are more likely to be attributed with effective leadership behaviors. More importantly, such positioning is, to a large degree, within the manager's control through engagement in such behaviors as providing advice and facilitating a culture through which followers may seek the manager for advice.

Implications for Leadership Research

We join a stream of research that defines leadership as a social and mutual influence process (e.g., DeRue & Ashford, 2010; Ritter & Lord, 2007) by emphasizing the social perceptions that influence the social-cognitive process of leadership evaluation. For instance, by engaging in a cycle of giving advice, a manager provides opportunities for leadership role-taking (i.e., as the manager provides advice) and role-granting (i.e., when a follower seeks advice). If successfully constructed, this identity construction process will reinforce leadership-structure schemas; accordingly, the initial classification as a (central) leader is likely to facilitate future leadership claims and grants, ultimately helping to provide clarity and acceptance to the leader-follower relationship (DeRue & Ashford, 2010). As DeRue and Ashford propose, "there are complexities related to these antecedents that are not fully captured in our theorizing and, thus, necessitate further theory development . . . we encourage scholars to extend our theory by also considering the impact of informal structures, such as social stratification, status hierarchies, and social networks" (p. 642). Our study in part answers this call by illustrating how social networks link to the leader-follower identity construction process.

Our study also contributes to a larger discourse about the nature of leadership and the role of subordinates. While mainstream leadership research has focused on leaders' abilities, such as leader-like traits or behaviors (DeRue, Nahragang, Wellman, & Humphrey, 2011), we focus on opportunities that let a manager be seen as a leader, a focus previously neglected in organizational studies (Blumberg & Pringle, 1982). Particularly, while the literature has suggested that subordinates' attribution processes are essential for leadership capacities to be observed (Pastor et al., 2002), the activation of leadership perception still requires specific social conditions that allow leadership characteristics to be discovered and developed (Balkundi et al.,

2011). By incorporating managers' social ties, social power, and follower perceptions, we take a cross-level approach; that is, we specify how manager-level constructs may act as signals and cues that subordinates use to evaluate their managers.

Implications for Social Network Literature

From a network standpoint, our research suggests that network studies should consider both positive and negative social ties. Mainstream psychology has been criticized for theorizing and anchoring in negative cases and ignoring normal and positive situations (Seligman & Csikszentmihalyi, 2000). Network research goes to the other extreme by focusing excessively on positive ties while ignoring negative ties and their potential harm. For example, a meta-analysis of social networks in teams studied only positive ties (Balkundi & Harrison, 2006). We took a different approach by considering both positive and negative networks, building on the notion that (a) people do not have solely positive or negative networks but rather have both types of networks concurrently and (b) both networks matter independently. Incorporating positive and negative networks provides a more balanced and realistic view. The results reported here address two different insights about negative and positive ties, both of which are addressed in the following paragraphs.

First, there is a debate about the comparative value and nature of positive and negative ties that suggests that negative relationships have greater psychological, emotional, cognitive, and behavioral implications than positive ties (Labianca & Brass, 2006). Further, there has been a lack of clarity about whether negative and positive ties are two ends of a single continuum or rather two separate constructs. First, across our two studies, we find that leaders' positive and negative centralities were not correlated (in Study 1: $r = .06$, *ns*; in Study 2: $r = –.06$, *ns*), suggesting that positive and negative ties are likely to be distinct constructs rather than two ends

of one continuum. Therefore, considering both positive and negative networks independently is essential to improve our understanding of how social networks serve as conduits of leadership perception. Second, the relative value of ties is also not clear, though individuals typically have fewer negative ties than positive ties (Venkataramani et al., 2013). In our analysis, we found that managers indeed had fewer incoming negative ties (Study 1: 2.58%; Study 2: 1.25%) than incoming positive ties (Study 1: 65.64%; Study 2: 66.77%) within their groups. However, results suggest that the positive and negative aspects of social networks are each separately yet significantly related to social power and leadership perception. Accordingly, our research findings provide empirical support to the theory of negative asymmetry (Labianca & Brass, 2006) and highlight the importance of managing negative networks at work.

Second, there is a debate in the network literature about whether social ties act as conduits of information or whether they are more like prisms that distort information that flows through the ties (Podolny, 2001). The results of this paper suggest that both positive and negative ties act as interactional lenses through which followers see their managers and that these lenses enable followers to discover the leaders within their managers. Organizations can incorporate the findings reported here to help new managers acquire the expertise necessary to be seen as leaders by their followers.

Limitations and Future Research

One obvious limitation is that the results of Study 2 are based on a cross-sectional research design. This suggests that alternative models could be equally valid. For instance, could social power predict network position instead of the model that we proposed? That is followers approach a powerful leader for advice and avoid those who possess less social power. To address this alternative explanation, we conducted a post-hoc analysis on Study 2 data where we reversed

the ordering of the variables, with leaders' positive and negative centralities as the mediators between social power and prototypical leadership. This post-hoc analysis revealed that both leader centralities had a nonsignificant mediation effect ($p > .05$) when the variables were arranged in this order. This post-hoc analysis provides further support that the data appears to match the directionality proposed in our theoretical framework. In Study 1 we had already temporally separated network centrality (measured at T1) and leadership perception (T2), and we also controlled for prior leader perception (T1). Thus, casual direction in that association is of lesser concern.

It is also worth noting that even though we argue that manager centrality and social power are critical to leadership perception, we do not specifically capture the encoding process of leadership construction from a follower's perspective. Individual follower differences could cause variances in leadership identification (Foti et al., 2012). Although we included multiple measures of followers' cognitive abilities (SAT scores and GPA), we did not include followers' deep-level characteristics, such as personality or self-identity, to test how deep-level characteristics might affect followers' perceptions of leadership. That is, some followers may be more inclined to see their managers as leaders, whereas others may have higher standards. Future studies should consider follower characteristics and attributes in the leadership emergence process to gain a deeper understanding of the cognitive construction process.

Conclusion

There has been a long-standing debate in the leadership field about the difference between leaders and managers (e.g., Northouse, 2015; Zaleznik, 1992). The results of this study lend clarity that helps to resolve this debate: Managers are appointed by the organization, but leaders are anointed by their followers. Further, the process by which followers see leadership in

their managers occurs not only through formal organizational mechanisms but also through the informal networks surrounding managers. Drawing on theories of social networks, social power, and leadership construction, we find that managers' social capital, in terms of both positive and negative relationships, is critical to the socially-constructed process of leadership conceptualization. We hope the theories and results presented here suggest a useful agenda for future research on social networks and leadership and contribute to the design of practical applications that improve managerial decisions.

References

Aguinis, H., Gottfredson, R. K., & Culpepper, S. A. (2013). Best-practice recommendations for estimating cross-level interaction effects using multilevel modeling. *Journal of Management*, *39*, 1490–1528.

Antonakis, J. (2011). Predictors of leadership: The usual suspects and the suspect traits. In A. Bryman, D. Collinson, K. Grint, B. Jackson, & M. Uhl-Bien (Eds.), *Sage handbook of leadership* (pp. 269–285). Thousand Oaks, CA: Sage.

Ayman, R., & Korabik, K. (2010). Leadership: Why gender and culture matter. *American Psychologist*, *65*, 157–170.

Balkundi, P., & Harrison, D. (2006). Ties, leaders and time in teams: Strong inference about the effects of network structure on team viability and performance. *Academy of Management Journal*, *49*, 49–68.

Balkundi, P., & Kilduff, M. (2005). The ties that lead: A social network approach to leadership. *Leadership Quarterly*, *17*, 419–439.

Balkundi, P., Kilduff, M., & Harrison, D. (2011). Centrality and charisma: Comparing how leader networks and attributions affect team performance. *Journal of Applied Psychology*, *96*, 1209–1222.

Bliese, P. D. (2000). Within-group agreement, non-independence, and reliability: Implications for data aggregation and analysis. In K. J. Klein & S. W. J. Kozlowski (Eds.), *Multi-level theory, research, and methods in organizations: Foundations, extensions, and new directions* (pp. 381–394). San Francisco, CA: Jossey-Bass.

Blumberg, M., & Pringle, C. D. (1982). The missing opportunity in organizational research: Some implications for a theory of work performance. *Academy of Management Review*, *7*, 560–569.

Borgatti, S. P., & Everett, M. G. (2006). A graph-theoretic perspective on centrality. *Social Networks*, *28*, 466–484.

Bowler, W. M., & Brass, D. J. (2006). Relational correlates of interpersonal citizenship: A social network perspective. *Journal of Applied Psychology, 91*, 70–82.

Brass, D. J. (1984). Being in the right place: A structural analysis of individual influence in an organization. *Administrative Science Quarterly*, *29*, 518–539.

Brass, D. J., & Burkhardt, M. E. (1993). Potential power and power use: An investigation of structure and behavior. *Academy of Management Journal*, *36*, 441–470.

Brass, D. J., & Krackhardt, D. (1999). The social capital of twenty-first-century leaders. In J. G. Hunt & R. L. Philips (Eds.), *Out-of-the-box leadership: Transforming the twenty-first century army and other top performing organizations* (pp. 179–194). Stamford, CT: JAI Press.

Burkhardt, M. E., & Brass, D. J. (1990). Changing patterns or patterns of change: The effects of a change in technology on social network structure and power. *Administrative Science Quarterly*, *35*, 104–127.

Chen, G., Kirkman, B., Kanfer, R., Allen, D., & Rosen, B. (2007). A multilevel study of leadership, empowerment, and performance in teams. *Journal of Applied Psychology, 92*, 331–346.

Cronshaw, S. F., & Lord, R. G. (1987). Effects of categorization, attribution, and encoding processes on leadership perceptions. *Journal of Applied Psychology, 72*, 97–106.

De Luque, M. S., Washburn, N. T., Waldman, D. A., & House, R. J. (2008). Unrequited profit: How stakeholder and economic values relate to subordinates' perceptions of leadership and firm performance. *Administrative Science Quarterly, 53*, 626–654.

Den Hartog, D. N., House, R. J., Hanges, P. J., Ruiz-Quintanilla, S. A., Dorfman, P. W. (1999). Culturally specific and cross-culturally generalizable implicit leadership theories: Are attributes of charismatic/transformational leadership universally endorsed? *Leadership Quarterly, 10*, 219–256.

DeRue, D. S., & Ashford, S. J. (2010). Who will lead and who will follow? A social process of leadership identity construction in organizations. *Academy of Management Review, 35*, 627–647.

DeRue, D. S., Nahragang, J. D., Wellman, N., & Humphrey, S. E. (2011). Trait and behavioral theories of leadership: An integration and meta-analytic test of their relative validity. *Personnel Psychology, 64*, 7–52.

Dinh, J. E., Lord, R. G., Gardner, W. L., Meuser, J. D., Liden, R. C., & Hu, J. (2014). Leadership theory and research in the new millennium: Current theoretical trends and changing perspectives. *Leadership Quarterly, 25*, 36–62.

Eagly, A. H., & Carli, L. L. (2003). The female leadership advantage: An evaluation of the evidence. *Leadership Quarterly, 14*, 807–834.

Eagly, A. H., & Johnson, B. T. (1990). Gender and leadership style: A meta-analysis. *Psychological Bulletin, 108*, 233–256.

Ellwardt, L., Labianca, G., & Wittek, R. (2012). Who are the objectives of positive and negative gossip at work? A social network perspective on workplace gossip. *Social Network, 34*, 193–205.

Ellwardt, L., Wittek, R., & Wieler, R. (2012). Talking about the boss: Effects of generalized and interpersonal trust on workplace gossip. *Group & Organization Management, 37*, 521–549.

Epitropaki, O., & Martin, R. (2004). Implicit leadership theories in applied settings: Factor structure, generalizability, and stability over time. *Journal of Applied Psychology, 89*, 293–310.

Epitropaki, O., Sy, T., Martin, R., Tram-Quon, S., & Topakas, A. (2013). Implicit leadership and followership theories "in the wild": Taking stock of information-processing approaches to leadership and followership in organizational settings. *Leadership Quarterly, 24*, 858–881.

Erdogan, B., & Enders, J. (2007). Support from the top: supervisors' perceived organizational support as a moderator of leader-member exchange to satisfaction and performance relationships. *Journal of Applied Psychology, 92*, 321–330.

Ferris, G. R., Liden, R. C., Munyon, T. P., Summers, J. K., Basik, K. J., & Buckley, M. R. (2009). Relationships at work: Toward a multidimensional conceptualization of dyadic work relationships. *Journal of Management*, *35*, 1379–1403.

Foti, R. J., & Hauenstein, N. (2007). Pattern and variable approaches in leadership emergence and effectiveness. *Journal of Applied Psychology*, *92*, 347–355.

Foti, R. J., Bray, B. C., Thompson, N. J., & Allgood, S. F. (2012). Know thy self, know thy leader: Contributions of a pattern-oriented approach to examining leader perceptions. *Leadership Quarterly*, *23*, 702–717.

Foti, R. J., Knee, R. E., Jr., & Backert, R. S. G. (2008). Multi-level implications of framing leadership perceptions as a dynamic process. *Leadership Quarterly*, *19*, 178–194.

French, J. R. P., & Raven, B. H. (1959). The bases of social power. In D. Cartwright (Ed.), *Studies in social power* (pp. 150–167). Ann Arbor: University of Michigan.

Geys, B. (2014). Better not look too nice? Employees' preferences towards (un)likeable managers. *Leadership Quarterly*, *25*, 875–884.

Goldberg, L. R. (1992). The development of markers for the Big-Five factor structure. *Psychological Assessment*, *4*, 26–42.

Gong, Y., Law, K. S., Chang, S., & Xin, K. R. (2009). Human resources management and firm performance: The differential role of managerial affective and continuance commitment. *Journal of Applied Psychology*, *94*, 263–275.

Goodwin, V. L., Bowler, W. M., & Whittington, J. L. (2009). A social network perspective on LMX relationships: Accounting for the instrumental value of leader and follower networks. *Journal of Management*, *35*, 954–980.

Grosser, T. J., Sterling, C. M., Scott, K. D., & Labianca, G. J. (2010). Social networks, groups and social exclusion: Combining sociometric and psychometric approaches to understanding social exclusion in organizational settings. In L. L. Neider & C. Schriesheim (Eds.), *The dark side of management* (pp.143–191). Charlotte, NC: Information Age Publishing.

Hamblin, R. (1958). Leadership and crises. *Sociometry*, *21*, 322–335.

Hanges, P., Lord, R., & Dickson, M. (2000). An information-processing perspective on leadership and culture: A case for connectionist architecture. *Applied Psychology: An International Review*, *49*, 133–161.

Hinkin, T. R., & Schriesheim, C. A. (1989). Development and application of new scales to measure the French and Raven (1959) bases of social power. *Journal of Applied Psychology*, *74*, 561–567.

Hollander, E. (2012). *Inclusive leadership: The essential leader-follower relationship*. New York, NY: Routledge.

Howard, A., & Bray, D. W. (1988). *Managerial lives in transition: Advancing age and changing times*. New York, NY: Guilford Press.

Ibarra, H., & Andrews, S. B. (1993). Power, social influence, and sense making: Effects of network centrality and proximity on employee perceptions. *Administrative Science*

Quarterly, 38, 277–303.

James, L. R., Demaree, R. G., & Wolf, G. (1993). r_{wg}: An assessment of within-group interrater agreement. *Journal of Applied Psychology, 78*, 306–309.

Judge, T. A., & Cable, D. M. (2004). The effect of physical height on workplace success and income: Preliminary test of a theoretical model. *Journal of Applied Psychology, 89*, 428–441.

Judge, T. A., Bono, J. E., Ilies, R., & Gerhardt, M. W. (2002). Personality and leadership: A qualitative and quantitative review. *Journal of Applied Psychology, 87*, 765–780.

Judge, T. A., Colbert, A. E., & Ilies, R. (2004). Intelligence and leadership: A quantitative review and test of theoretical propositions. *Journal of Applied Psychology, 89*, 542–552.

Katz, D., & Kahn, R. L. (1978). *The social psychology of organizations*. New York, NY: Wiley.

Kilduff, M., & Brass, D. J. (2010). Organizational social network research: Core ideas and key debates. *Academy of Management Annals, 4*, 317–357.

Labianca, G., & Brass, D. J. (2006). Exploring the social ledger: Negative relationships and negative asymmetry in social networks in organizations. *Academy of Management Review, 31*, 596–614.

Lemke, D. K., & Schminke, M. (1991). Ethics in declining organizations. *Business Ethics Quarterly, 1*, 235–248.

Lord, R. G., & Shondrick, S. J. (2011). Leadership and knowledge: Symbolic, connectionist, and embodied perspectives. *The Leadership Quarterly, 22*, 207–222.

Lord, R. G., De Vader, C. L., & Alliger, G. M. (1986). A meta-analysis of the relation between personality traits and leadership perceptions: An application of validity generalization procedures. *Journal of Applied Psychology, 71*, 402–410.

Lord, R. G., Foti, R. J., & De Vader, C. L. (1984). A test of leadership categorization theory: Internal structure, information processing, and leadership perceptions. *Organizational Behaviors and Human Performance, 34*, 343–378.

Lord, R. G., Foti, R. J., & Phillips, J. (1982). A theory of leadership categorization. In J. G. Hunt, U. Sekaran, & C. Schriesheim (Eds.), *Leadership: Beyond establishment views* (pp. 104–121). Carbondale: Southern Illinois University Press.

Lord, R.G., & Maher, K. J. (1991). *Leadership and information processing: Linking perceptions and organizational performance*. New York, NY: Routledge, Chapman, & Hall.

Mehra, A., Dixon, A. L., Brass, D. J., & Robertson, B. (2006). The social network ties of group leaders: Implications for group performance and leader reputation. *Organization science*, *17*, 64-79.

Meindl, J. R. (1995). The romance of leadership as a follower-centric theory: A social constructionist approach. *Leadership Quarterly, 6*, 329–341.

Morgeson, F., DeRue, S., Karam, E. (2010). Leadership in teams: A functional approach to understanding leadership structures and processes. *Journal of Management*, *36*, 5−39.

Neubert, M. J., & Taggar, S. (2004). Pathways to informal leadership: The moderating role of

gender on the relationship of individual differences and team member network centrality to informal leadership emergence. *Leadership Quarterly*, *15*, 175–194.

Northouse, P. G. (2015). *Leadership: Theory and practice*. Thousand Oaks, CA: Sage.

Pastor, J., Meindl, J. R., & Mayo, M. C. (2002). A network effects model of charisma attributions. *Academy of Management Journal*, *45*, 410–420.

Pelz, D. (1952). Influence: A key to effective leadership in the first-line supervisor. *Personnel*, *29*, 209–226.

Phillips, J. S., & Lord, R. G. (1982). Schematic information processing and perceptions of leadership in problem-solving groups. *Journal of Applied Psychology*, *67*, 486–492.

Phillips, J. S., (1984). The accuracy of leadership ratings: A cognitive categorization perspective. *Organizational Behavior and Human Performance*, *33*, 125–138.

Podolny, J. M. (2001). Networks as the pipes and prisms of the market. *American Journal of Sociology*, *107*, 33–60.

Podolny, J. M., & Baron, J. N. (1997). Resources and relationships: Social networks and mobility in the workplace. *American Sociological Review*, *62*, 673–693.

Popper, M., & Mayseless, O. (2003). Back to basics: Applying a parenting perspective to transformational leadership. *Leadership Quarterly*, *14*, 41–65.

Preacher, K. J., Zyphur, M. J., & Zhang, Z. (2010). A general multilevel SEM framework for assessing multilevel mediation. *Psychological Methods*, *15*, 209–233.

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*, 545–556.

Rahim, M. A., Antonioni, D., & Psenicka, C. (2001). A structural equations model of leader power, subordinates' styles of handling conflict, and job performance. *International Journal of Conflict Management*, *12*, 191–211.

Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis method.* Thousand Oaks, CA: Sage.

Richardson, M. J., Dale, R., & Marsh, K. L. (2014). Complex dynamical systems in social and personality psychology. In H. T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology* (pp. 253–282). New York, NY: Cambridge University Press.

Ritter, B. A., & Lord, R. G. (2007). The impact of previous leaders on the evaluation of new leaders: an alternative to prototype matching. *Journal of Applied Psychology*, *92*, 1683–1695.

Rook, K. S. (1984). The negative side of social interaction: Impact on psychological well-being. *Journal of Personality and Social Psychology*, *46*, 1097–1108.

Rosch, E. (1978). Principles of categorization. In E. Rosch & B. B. Lloyd (Eds.), *Cognition and categorization* (pp. 27–48). Hillslade, NJ: Lawrence Erlbaum.

Salmivalli, C., Lagerspetz, K., Bjorkqvist, K., Osterman, K., & Kaukiainen, A. (1996). Bullying

as a group process: Participant roles and their relations to social status within the group. *Aggressive Behavior*, *22*, 1–15.

Seligman, M. E., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist*, *55*, 5–14.

Shondrick, S. J., Dinh, J. E., & Lord, R. G. (2010). Developments in implicit leadership theory and cognitive science: Applications to improving measurement and understanding alternatives to hierarchical leadership. *Leadership Quarterly*, *21*, 959–978.

Smith, J. R., & Golden, P. A. (1987). *Airplane: A strategic management simulation*. Englewood Cliffs, NJ: Prentice-Hall.

Snijders, T. A. B., & Bosker, R. J. (1999). *Multilevel analysis: An introduction to basic and advanced multilevel modeling*. Thousand Oaks, CA: Sage.

Soubelet, A., & Salthouse, T. A. (2011). Personality–cognition relations across adulthood. *Developmental Psychology*, *47*, 303–310.

Sparrowe, R. T. (2014). Leadership and social networks: Initiating a different dialog. In D. V. Day (Ed.), *The Oxford handbook of leadership and organizations* (pp. 434–454). Oxford, England: Oxford University Press

Sparrowe, R. T., & Liden, R. C. (2005). Two routes to influence: Integrating leader–member exchange and social network perspectives. *Administrative Science Quarterly*, *50*, 505–535.

Sparrowe, R. T., Liden, R. C., Wayne, S. J., & Kraimer, M. L. (2001). Social network and the performance of individuals and groups. *Academy of Management Journal*, *44*, 316–325.

Takeuchi, R., Chen, G., & Lepak, D. P. (2009). Through the looking glass of a social system: Cross-level effects of high-performance work systems on employees' attitudes. *Personnel Psychology*, *62*, 1–29.

Venkataramani, V., & Dalal, R. (2007). Who helps and harms whom? Relational antecedents of interpersonal helping and harming in organizations. *Journal of Applied Psychology*, *92*, 952–966.

Venkataramani, V., Labianca, G. J., & Grosser, T. (2013). Positive and negative workplace relationships, social satisfaction, and organizational attachment. *Journal of Applied Psychology*, *98*, 1028–1039.

Wasserman, S., & Faust, K. (1994). *Social network analysis: Methods and applications*. Cambridge, UK: Cambridge University Press.

Xia, L., Yuan, Y. C., & Gay, G. (2009). Exploring negative group dynamics: Adversarial network, personality, and performance in project groups. *Management Communication Quarterly*, *23*, 32–62.

Yuan, Y. C., Carboni, I., & Ehrlich, K. (2014). The impact of interpersonal affective relationships and awareness on expertise seeking: A multilevel network investigation. *European Journal of Work and Organizational Psychology*, *23*, 554–569.

Yukl, G., & Falbe, C. M. (1991). Importance of different power sources in downward and lateral relations. *Journal of Applied Psychology*, *76*, 416–423.

Zaccaro, S. J. (2007). Trait-based perspectives of leadership. *American Psychologist*, *62*, 6–16.

Zaleznik, A. (1992). Managers and leaders: Are they different? *Harvard Business Review*, *72*, 126−135.

Zhang, Z., Waldman, D. A., & Wang, Z. (2012). A multilevel investigation of leader–member exchange, informal leader emergence, and individual and team performance. *Personnel Psychology*, *65*, 49–78.

Zhou, L., Wang, M., Chen, G., & Shi, J. (2012). Supervisors' upward exchange relationships and subordinate outcomes: Testing the multilevel mediation role of empowerment. *Journal of Applied Psychology*, *97*, 668–680.

Table 1. Descriptive Statistics for Study 1

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Control variables																	
1. Leader GPA	2.93	.48	--														
2. Leader SAT	1038.97	131.70	.13	--													
3. Leader sex	1.39	.49	.16	.13	--												
4. Leader extroversion	3.51	.65	.00	–.00	.31	**(.87)**											
5. Leader agreeableness	3.95	.61	–.02	–.05	.43	.64	**(.86)**										
6. Leader conscientiousness	3.81	.55	.22	–.09	.33	.27	.47	**(.86)**									
7. Leader emotional stability	3.43	.57	.07	–.08	–.11	.44	.15	.15	**(.89)**								
8. Leader openness	3.69	.48	.14	.26	.18	.44	.42	.49	.19	**(.90)**							
9. Follower GPA	2.89	.48	.05	.07	.02	.07	.04	–.14	–.02	.04	--						
10. Follower SAT	982.57	159.76	.07	.04	.03	.06	.00	.01	–.02	.00	.20	--					
11. Follower sex	1.32	.47	–.07	–.08	–.04	.02	.12	–.02	.04	.08	.07	–.01	--				
12. Leadership perception (T1)	3.61	.81	.08	.28	–.07	–.05	–.03	.10	–.03	.03	–.11	–.12	–.03	**(.93)**			
Main variables																	
13. Leader positive centrality (T1)	65.54	29.98	.06	.02	.25	–.10	.08	.13	–.26	.00	.03	–.04	.02	.15	--		
14. Leader negative centrality (T1)	2.58	8.65	–.16	–.15	.13	.06	–.01	.13	.08	–.04	–.19	.00	–.09	–.08	.06	--	
15. Leadership perception (T2)	3.63	.78	.10	.16	.01	.08	–.01	.05	.01	.02	–.15	–.14	–.30	.63	.22	–.08	**(.94)**

Note. N = 192; leader level variables are disaggregated into the individual level; scale reliability are in the parentheses along the diagonal; for correlation coefficient $|r| > .12$, $p < .10$; $|r| > .14$, $p < .05$; $|r| > .18$, $p < .01$.

Table 2. HLM Results for Study 1

	Dependent Variable: Leadership perception (T2)			
	Model 1		Model 2	
	γ	*SE*	*γ*	*SE*
Control variables				
L2 (leader level)				
Sex	–.13	.15	–.16	.15
GPA	.15	.11	.10	.11
SAT	.01**	.00	.01**	.00
Extroversion	.30*	.16	.28*	.15
Agreeableness	–.16	.13	–.17	.12
Conscientiousness	.14	.14	.11	.14
Emotional stability	–.08	.14	.03	.14
Openness	-.23	.15	–.20*	.11
L1 (individual level)				
Sex	.03	.10	.01	.11
GPA	–.15	.11	–.18*	.11
SAT	–.01*	.00	–.01*	.00
Leadership perception (T1)	.48**	.10	.48**	.08
Independent variables				
L2				
Positive network centrality			.01**	.00
Negative network centrality			–.01**	.00
Pseudo R^2	.14		.20	
OLS-based R^2	.43**		.45**	
OLS-based ΔR^2			.02*	

Note. N_{leader} = 63, $N_{follower}$ = 192; ICC for leadership perception = .18.
* $p < .05$. ** $p < .01$, one-tailed.

Table 3. Descriptive Statistics for Study 2

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Control variables																
1. Manager position power	3.03	.31	**(.68)**	.26	.05	.02	.30	.27	–.36	.07	–.02	–.09	.26	–.11	.45	.22
2. Advice centrality among managers	18.99	22.75	.28	--	.37	.14	.52	.27	–.39	–.19	.30	.04	.13	.12	.21	.03
3. Advice tie with supervisors	.32	.47	.09	.42	--	–.05	.31	.15	.02	–.10	.21	.19	.02	.22	.18	.07
4. Manager sex	1.84	.37	–.06	.18	–.11	--	.15	.03	–.07	–.11	.11	.11	.14	.00	–.01	–.09
5. Manager age	34.58	14.12	.32	.46	.43	.19	--	.45	–.74	–.04	.56	.34	.16	.18	.22	.15
6. Manager team tenure	3.70	4.79	.30	.17	.17	.03	.34	--	–.40	–.12	.35	.47	–.07	.01	.13	–.04
7. Organization type	.30	.46	–.30	.38	–.14	–.09	–.70	–.29	--	–.11	–.66	–.41	–.03	–.21	–.15	–.09
8. Follower sex	1.22	.42	.00	–.05	.00	–.03	.00	–.08	–.03	--	–.03	–.06	–.25	–.01	–.20	–.12
9. Follower age	31.03	11.53	–.08	.11	.23	.11	.38	.28	–.54	–.07	--	.72	.00	.18	.15	.05
10. Follower team tenure	5.19	7.03	–.13	–.05	.18	.10	.25	.39	–.31	–.07	.69	--	–.21	.14	–.04	–.19
Main variables																
11. Manager positive centrality	66.77	27.25	.27	.07	–.03	.15	.13	–.14	–.01	–.09	–.10	–.23	--	–.06	.46	.30
12. Manager negative centrality	1.25	3.91	–.21	.18	.27	.07	.11	–.06	–.23	.02	.11	–.01	–.04	--	–.24	–.27
13. Manager social power	3.77	.47	.52	.02	.03	–.17	.15	.12	–.11	–.10	.06	–.03	.38	–.46	**(.91)**	.53
14. Leadership perception	3.55	.93	.25	–.10	–.05	–.16	.04	–.03	–.02	–.07	.00	–.16	.23	–.30	.52	**(.87)**

Note. The values of scale reliability are in the parentheses along the diagonal. The values of above the diagonal were the correlations among level 2 variables (N = 50); for correlation coefficient $|r| > .24$, $p < .10$; $|r| > .28$, $p < .05$; $|r| > .35$, $p < .01$; two-tailed test. The values of below the diagonal were the correlations among level 1 variables (N = 254); manager level (L2) variables are disaggregated into the individual level (L1) here; for correlation coefficient $|r| > .11$, $p < .10$; $|r| > .13$, $p < .05$; $|r| > .16$, $p < .01$; two-tailed test.

Table 4. The OLS Regression Result for Study 2

Predictor variables	Dependent Variable: Manager social power			
	Model 1		Model 2	
	b	*SE*	*b*	*SE*
Control variables				
Manager position power	.66**	.22	.41*	.21
Advice centrality among managers	.00	.00	.00	.00
Advice tie with supervisors	.09	.16	.20	.15
Manager sex	–.04	.18	–.08	.16
Manager age	.01	.01	.00	.01
Manager tenure	.00	.02	.03	.01
Organization type	.13	.23	–.09	.22
Independent variables				
Positive network centrality			.01**	.00
Negative network centrality			–.03*	.02
OLS-based R^2	.23		.41**	
OLS-based ΔR^2			.28**	

Note. n = 50; standardized estimates are reported.
* $p < .05$; ** $p < .01$, one-tailed.

Table 5. The HLM Result for Study 2

	Dependent Variable: Leadership perception					
	Model 1		**Model 2**		**Model 3**	
	γ	*SE*	*γ*	*SE*	*γ*	*SE*
Control variables						
L2 (manager level)						
Manager position power	.61*	.33	.30	.33	.00	.30
Advice centrality among managers	.00	.00	.00	.00	.00	.00
Advice tie with supervisors	.01	.23	.17	.23	.01	.20
Manager sex	–.24	.26	–.27	.25	–.20	.21
Manager age	.01	.01	.00	.01	.00	.01
Manager tenure	–.02	.02	–.02	.02	–.02	.02
Organization type	.09	.34	–.20	.33	–.08	.29
L1 (individual level)						
Sex	–.09	.12	–.09	.12	–.07	.12
Age	–.02**	.01	–.02**	.01	.02**	.00
Tenure	–.03*	.01	–.03*	.01	–.03**	.01
Independent variables						
L2						
Positive network centrality			.01*	.00	.00	.00
Negative network centrality			–.05*	.02	–.02	.02
Manager social power					.73**	.21
Pseudo R^2	.01		.08		.19	
OLS-based R^2	.14**		.23**		.32**	
OLS-based ΔR^2			.09**		.09**	

Note. $N_{manager}$= 50, $N_{follower}$ = 254; ICC for leadership perception = .36.
$^{+}p < 10$, $*p < .05$, $** p < .01$, one-tailed.