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The Paradox of Agency: Feeling Powerful Reduces Brokerage Opportunity Recognition yet Increases Willingness to Broker

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Abstract

Research suggests positions of brokerage in organizational networks provide many benefits, but studies tend to assume everyone is equally able to perceive and willing to act on brokerage opportunities. Here we challenge these assumptions in a direct investigation of whether people can perceive brokerage opportunities and are willing to broker. We propose that the psychological experience of power diminishes individuals' ability to perceive opportunities to broker between people who are not directly connected in their networks, yet enhances their willingness to broker. In Study 1, we find that employees in a marketing and media agency who had a high sense of power were likely to see fewer brokerage opportunities in their advice networks. In Study 2, we provide causal evidence for this claim in an experiment where the psychological experience of power is manipulated. Those who felt powerful, relative to those who felt little power, tended to see fewer brokerage opportunities than actually existed, yet were more willing to broker, irrespective of whether there was a brokerage opportunity present. Collectively, these findings present a paradox of agency: Individuals who experience power are likely to underperceive the very brokerage opportunities for which their sense of agency is suited.

keywords: social networks; power; brokerage; structural holes; transitivity

People get ahead in their careers in part because of their occupation of brokerage roles in the workplace (Burt, 1992; Fang et al., 2015). Brokerage involves controlling and coordinating the flow of ideas and information between currently disconnected people (Lingo & O'Mahony, 2010). People who occupy brokerage positions tend to excel in terms of job performance (Mehra, Kilduff, & Brass, 2001), creative ideas (Burt, 2004), and innovation (Baer, Evans, Oldham, & Boasso, 2015). But the wide variation in the outcomes of those occupying brokerage positions (Burt, 2005) is little understood (Burt, Kilduff, & Tasselli, 2013). To address this issue, we investigate whether some people who have access to brokerage opportunities fail to perceive them. We suggest that people who feel powerful may be ready and willing to engage in brokerage yet be unable to perceive the brokerage opportunities available.

In bringing a psychological perspective to bear on how brokerage is perceived in organizations, we challenge two assumptions current in the network literature. The first assumption is that a network position (such as brokerage) provides opportunities even when the occupant of the position *may misperceive the surrounding network structure* (e.g., Cook, Emerson, Gillmore, & Yamagishi, 1983). We challenge this assumption on the basis that mental representations of such network opportunities are the necessary first step before people can take advantage of these opportunities (Smith, Menon, & Thompson, 2012). We argue that the subjective feeling of power (i.e., "the perception of one's ability to influence another person or other people"; Anderson, John, & Keltner, 2012, p. 316) affects the extent to which individuals identify brokerage opportunities in social networks. We emphasize that subjective feelings of power can prompt the heuristic processing of social information (Smith & Trope, 2006) with consequences that include filling in the gaps in social structure. Thus, those who feel powerful are likely to perceive connections between people even when these

connections are absent (Freeman, 1992). The personal sense of power is likely to reduce awareness of the gaps in social networks that represent brokerage opportunities.

Second, we challenge the assumption in prior network research (e.g., Burt, 2005) that the *presence of brokerage opportunities is by itself sufficient motivation* for the individual to be willing to pursue these brokerage opportunities. We suggest that the agency induced by a personal sense of power (e.g., Anderson & Berdahl, 2002; Anderson et al., 2012) is a key influence on people's willingness to engage in brokerage whether or not brokerage opportunities are available. People who have a low personal sense of power are likely to be relatively unwilling to pursue brokerage opportunities.

In two studies, we develop and test theory concerning what we term the paradox of agency: Although those who feel powerful are more willing to pursue brokerage than those who feel less powerful, those who feel more powerful are less able to perceive brokerage opportunities. Whereas sociological studies of power and exchange networks (e.g., Cook & Whitmeyer, 1992) suggest that individuals have power as a result of their connections in the network, our perspective suggests the psychological experience of power itself affects individuals' perceptions of brokerage opportunities in the network, and their willingness to broker across these social divides.

Brokerage Opportunities in Social Networks

Brokerage theory builds on the long tradition of work concerning social interactions among a triad of three people (e.g., Cartwright & Harary, 1956; Heider, 1958). The broker is the third who benefits from connecting two otherwise disconnected people (Simmel, 1923) by controlling the flow of resources between them (Cook & Whitmeyer, 1992; Neuhofer, Kittel, & Reindl, 2016; Yamagishi, Gillmore, & Cook, 1988). In the traditional structural view, "social structure can dominate motivation" (Granovetter, 2005, p. 34): People who may be motivated to broker are unable to do so unless they occupy a brokerage position in an open

triad in which they connect otherwise disconnected individuals. Prior work from this perspective on the benefits of brokerage has assumed that individuals are similar to each other in their ability to notice disconnections among contacts (e.g., Burt, 2005, p. 60).

We challenge this structural perspective by noting that the existence of a brokerage opportunity in one or more open triads is an insufficient explanation for brokerage. Some people may have access to numerous brokerage opportunities but fail to perceive them, whereas others may have limited access to brokerage opportunities yet perceive them accurately. Furthermore, even an accurate perception of brokerage opportunities may not be enough for individuals to benefit from them – people also have to be willing to broker. Whether individuals feel a sense of power, we propose, is important for understanding whether they (a) perceive brokerage opportunities and (b) show willingness to act on these opportunities.

Power and Brokerage

Power derives from many sources, including formal positions of authority (Guinote, 2017; Magee & Galinsky, 2008). However, the most immediate determinant of attitudes and behavior is the individual's subjective sense of power (Anderson & Berdahl, 2002; Galinsky, Gruenfeld, & Magee, 2003). Power from formal authority is incorporated in subjective feelings concerning how much control and agency people *feel* they have vis-à-vis others (Bakan, 1966; Foa & Foa, 1974; Hogan, 1983; Moskowitz, 1994; Wiggins, 1979). If the individual feels powerless, then being legitimately in control of resources may avail the individual of little agency (Anderson & Kilduff, 2009). If the individual feels powerful, then the absence of a resource, such as information essential for a group task, is unlikely to prevent the individual from behaving proactively and exerting influence over the group (Anderson & Kilduff, 2009). As research has indicated, "sometimes the [objectively] powerful are inhibited, indecisive, and risk averse [whereas] … the powerless, at times, do

act and take risks" (Lammers, Galinsky, Gordijn, & Otten, 2008, p. 558). Indeed, a large body of research shows that subjective feelings of power are the most proximal determinant of behavior, above and beyond actual power, although the latter of course feeds into the former (e.g., Anderson & Berdahl, 2002; Galinsky et al., 2003), and objective control over resources may matter for other outcomes.

How Does Personal Sense of Power Affect Brokerage Opportunity Recognition?

A personal sense of power energizes individuals to pursue goals and opportunities in their social realms (Guinote, 2017; Keltner, Gruenfeld, & Anderson, 2003). Thus, we might expect a greater sense of power to increase individuals' alertness to disconnects between their contacts, given the rewards associated with brokerage opportunities (Burt et al., 2013). However, people who feel powerful, relative to those who feel less powerful, also feel more psychologically distant from other people, and therefore tend to engage in abstract thinking toward these other people (Magee & Smith, 2013; Smith & Trope, 2006; Trope & Liberman, 2010). This tendency toward abstraction leads those who feel powerful to think about their social contacts in a less effortful, less deliberate, more heuristic way (Smith & Trope, 2006). By contrast, those who experience low power tend to engage in systematic processing of the details of relationships, and therefore tend to be more accurate in their perceptions of social ties (Simpson & Borch, 2005; Simpson, Markovsky, & Steketee, 2011).

We argue that feeling a sense of power is apt to affect perception of social networks. Cognitive network research shows that, in general, people struggle to learn and recall who is connected to whom in the workplace (Brands, 2013; Kilduff & Brass, 2010). To compensate, people "chunk" the network into triads as a fundamental way of learning and recalling who is connected to whom (Brashears & Quintane, 2015; De Soto, 1960; Janicik & Larrick, 2005). Moreover, people tend to mistakenly assume these triads are closed, that is, all members of the three-person group are connected to each other (Freeman, 1992; Krackhardt & Kilduff,

1999). For example, if an employee has two advice partners at work, he or she is likely to assume advice flows from one partner to the other. Crucially, a closed triad (referred to as a transitive triad in the network literature; e.g., Madhavan, Gnyawali, & He, 2004) offers no brokerage opportunity. Only when there is a missing connection between two contacts can a person broker information between them. We invoke construal-level theory (Smith & Trope, 2006) to suggest that this tendency toward heuristic, abstract processing of social network connections is more pronounced among those who feel powerful. Personal sense of power, in accentuating the tendency toward misperceiving non-existent connections among the individual's contacts, thus reduces the likelihood that people recognize the missing links among their contacts that represent brokerage opportunities.

Conversely, people who feel relatively powerless are unlikely to think in broad and abstract terms because they feel dependent on other people (Fiske, 1993) and experience greater demands from social situations (Galinsky, Magee, Gruenfeld, Whitson, & Liljenquist, 2008). Those who lack a sense of power pay more attention to others, including showing empathic concern (Woltin, Corneille, Yzerbyt, & Förster, 2011), taking others' perspectives (Galinsky, Magee, Inesi, & Gruenfeld, 2006), and responding to others' psychological states (Anderson, Keltner, & John, 2003; Van Kleef et al., 2008). Thus, brokerage opportunities should be more easily recognized by those who lack a sense of power.

Hypothesis 1: The higher an individual's personal sense of power, the fewer brokerage opportunities the individual perceives.

How Does Personal Sense of Power Affect Willingness to Broker?

A related question concerns who is motivated to engage in brokerage (irrespective of whether brokerage opportunities are available). Although the benefits of brokerage in organizations are well-established (Burt, 2005), brokerage activity is unlikely to appeal to everyone, as it can be onerous and stressful (Stovel & Shaw, 2012). Coordinating and sharing

information with people who have different expertise, vocabulary, and goals requires considerable effort and skill (Lingo & O'Mahony, 2010). Managers with ties to people in different departments tend to experience role strain (Mehra & Schenkel, 2008). The brokerage role of spanning the social divides in organizations brings career rewards (Fang et al., 2015), but also imposes psychological costs involving potential loss of reputation (Podolny & Baron, 1997; Xiao & Tsui, 2007). Given these potential downsides, the question of who is willing to broker is an important one to address.

We suggest that those who feel powerful are likely to be active in brokerage attempts because feelings of power lead the individual to focus on the advantages of brokerage while overlooking the drawbacks. Those who feel powerful tend to see social situations more in terms of rewards (e.g., thinking that others will like them) and less in terms of threats (e.g., thinking that others will be angry toward them) (Anderson & Berdahl, 2002). Thus, we anticipate that those who feel powerful will tend to see brokerage activity as an attractive opportunity rather than as an onerous burden. The experience of power also leads people to be resistant to situational pressures (Galinsky et al., 2008). Those who feel powerful may, therefore, tend to discount the role strain associated with brokering between people. Thus:

> *Hypothesis 2:* The higher an individual's personal sense of power, the more willing the individual is to engage in brokerage between two parties.

Overview of Studies

We conducted two studies that complemented each other in terms of examining how feelings of power affected perceptions of brokerage. First, we collected data from the main campus of a global marketing and technology agency to test our first prediction that greater feelings of power are associated with perceiving fewer brokerage opportunities. In this company, awareness of brokerage opportunities was an important aspect of ensuring collaborative outcomes. Our test of Hypothesis 1 focused on the ego network -- the set of

connections within which the individual is embedded. In Study 2, we extended Study 1's results through an experiment in which we manipulated feelings of power and examined individuals' learning of brokerage opportunities among a hypothetical set of future colleagues. Thus, we tested Hypothesis 1 in the context of a set of people with whom the participant was not currently connected. We also tested Hypothesis 2's prediction that power increases willingness to act on brokerage opportunities, including cases where brokerage opportunities were present (or not).

Study 1

Method

Participants. We emailed a survey invitation to all 211 employees working across four departments (client services, creative design, accounting, and sales) of a media agency. Complete responses were received from 162 individuals for a valid response rate of 77% (64 women, 98 men, M_{age} = 34.44, *SD* = 8.29).

Measures

Sense of power. To capture the psychological experience of power, we used the mean of eight items from the Sense of Power scale (Anderson et al., 2012; α = .85; end points: 1 = strongly disagree, 7 = strongly agree). We prefaced each question with the stem: "In my relationships with others at work…" Examples of items include: "I think I have a great deal of power," "I can get them to listen to what I say," and "Even when I try, I am not able to get my way" (reverse-scored).

Perceived brokerage opportunities. Our dependent variable reflects the extent to which the respondent (i.e., "ego" in network terminology) perceives missing relations among ego's direct connections (i.e., "alters"). These missing connections (absent ties between alters) represent opportunities for brokerage (Oh & Kilduff, 2008). To gain information on ego's perceived advice network, we asked respondents to "consider who you go to for advice

about important matters, such as help with problems at work, knowledge about how to handle a particular situation, and so on. Who do you go to most frequently for advice in this company?" Then, on the following page, the names that each respondent had provided were displayed in a square matrix that allowed the respondent to provide perceptions of who, among the alters listed, went to whom for advice. From these data, we calculated the number of transitive (i.e., fully connected) triads that included ego and divided this by the number of potentially transitive triads that included ego (Holland & Leinhardt, 1970; Oh & Kilduff, 2008, p. 1159) to produce a measure of connectedness.[1] Because we were interested in the extent of disconnectedness (i.e., brokerage opportunities) in ego's network, we changed the sign of the proportion from positive to negative in reporting the analyses.

Note that a transitive advice triad is a closed triad in the sense that one individual provides advice to two alters between whom there is an advice relation, as illustrated by the triad on the left in Figure 1. An intransitive triad (one which offers a brokerage opportunity) is an open triad in the sense that the advice relation between the two alters is absent, as illustrated in the triad on the right in Figure 1.

----- Insert Figure 1 about here -----

Controls. We controlled for *age*, *gender*, and *formal organizational rank* given the likelihood that these variables affected perceptions of power. To control for the inherent tendency to connect across gaps in social structure, we used the mean of three items (e.g., "I find it easy to bring individuals together") from the seven-point Propensity to Connect with Others' scale (Totterdell, Holman, & Hukin, 2008; $\alpha = .75$). We also included two network-related controls. First, we controlled for *actual brokerage opportunities*, using the roster method (e.g., Mehra et al., 2001) to collect *actual* advice network data across the four departments. We asked each respondent to look over a list of all employees across the four departments and indicate each person he or she went to for help and advice. Each individual

could list up to ten names. A person was considered to actually go to another for advice only if that person claimed that he or she went to the other for advice. This definition of an actual advice link is known as the row-dominated locally aggregated structure (Krackhardt, 1987) and follows the standard procedure in network analysis (e.g., Kilduff & Krackhardt, 1994, p. 92). Although this presents the challenge of not having the ties "confirmed" by a criterion (e.g., behavioral reports), research shows that people are reliable at gauging who regularly provides advice, even if they are poor at recalling who provided them with advice on specific occasions (Freeman, Romney, & Freeman, 1987). Connections among the people that ego nominated above were determined by data not from ego, but from other respondents' nominations. Thus, ego would be connected to John and Eve if ego indicated going to each of them for advice, but an advice connection from Eve to John would only be recorded if Eve indicated she went to John for advice. We calculated the number of transitive (i.e., fully connected) triads that included ego and divided this by the number of potentially transitive triads that included ego and reversed the sign of the proportion in analyses so as to represent actual brokerage opportunities. Second, to control for the possibility that larger networks offer more brokerage opportunities, we controlled for *network size* (i.e., the number of contacts ego has) in the actual and perceived advice networks. Further details on network measurement, including supplemental analyses using betweenness centrality (Freeman, 1977) and network constraint (Burt, 1992) as additional control variables for measures of structural position, are included in the Appendix. This research was approved by the Research Ethics Committee at the University of Cambridge (protocol number: 2010.60) under the application, "Social Network Perceptions and Leadership Effectiveness."

Analytic Procedure

The measure of perceived brokerage opportunities is bounded at zero and one, making it inappropriate for ordinary least squares analysis. Thus we followed similar network

research (see Kleinbaum, 2012; Sasovova, Mehra, Borgatti, & Schippers, 2010) and conducted fractional logit regressions with robust standard errors to adjust for the non-independence of observations (Papke & Wooldridge, 1996).

Results and Discussion

Descriptive statistics and correlations among study variables are presented in Table 1. We found support for Hypothesis 1's prediction that the more that individuals feel powerful, the fewer gaps they perceive among their network advice contacts (b = -.34, 95% CI [-.64, -.05], p = .02). As Table 2 shows, this effect remained significant after controlling for actual brokerage opportunities and the significant effect of formal organizational rank (b = .41, 95% CI [.15, .67], p = .002).

----- Insert Tables 1 and 2 about here -----

These results support the idea that the psychological experience of power blinds people to brokerage opportunities, even if these people have higher ranks that give them access to such opportunities. We conducted a second study, an experiment, to examine whether sense of power would causally affect brokerage perceptions among a group in which ego is not yet embedded, and to rule out potential alternative explanations. Specifically, we used a learning experiment to test both aspects of the paradox of agency that sense of power predicts fewer perceived brokerage opportunities, yet a greater willingness to broker.

Study 2

Method

Participants. We recruited 330 full-time U.S. employees (168 women, 162 men; M_{age} = 36.39, SD = 9.86) from Amazon's Mechanical Turk (MTurk) to participate in a study about social interactions and memory. Consistent with best practice recommendations for using MTurk samples (Cheung, Burns, Sinclair, & Sliter, 2017), we conducted several attention checks to minimize potential noise in the experiment (see Appendix A).

Procedure and measures. The study featured a power manipulation, followed by a network learning task and an assessment of willingness to broker.

Power manipulation. We randomly assigned individuals to a high-power or low-power condition. Drawing on classic (Kipnis, 1972; Kipnis, Castell, Gergen, & Mauch, 1976) and more recent (Anderson & Berdahl, 2002) research, we manipulated participants' experience of power using a role-based scenario. In the high-power (low-power) condition, participants read:

> You have recently been hired as an upper-level executive (entry-level employee) at a small-to-moderate sized company. As an upper-level executive (entry-level employee), you will have substantial (very little) power in the company, especially when it comes to control over resources, compensation, and who is responsible for different duties. Please take a moment to consider how it would feel to be in this role, and write 2-4 sentences about how it would feel.

Reviews suggest that role-based manipulations reliably induce a sense of power in participants (Galinsky et al., 2008; Galinsky, Rucker, & Magee, 2015). We used the measure of personal sense of power from Study 1 as a manipulation check to examine whether participants in the high- and low-power conditions differed with respect to their psychological experience of power.

Network learning task. To experimentally test for heuristic processing of social network relations, we followed prior research (e.g., De Soto, 1960; Janicik & Larrick, 2005) and conducted a network learning study as follows. Each participant was informed that their predecessor had provided them (as a newcomer) with potentially useful information about the relationship patterns between existing employees, such as who provides help and advice to whom. These relationship data, they were told, would be shown on the following page, where they would be asked to remember who, in their new team, provides help and advice to whom.

The network they were asked to learn is depicted in Figure 2 (not shown to participants). We stressed that participants, without writing anything down, should do their best to learn who provides help and advice to whom. Following these instructions, participants had 90 seconds to learn the advice network, after which the survey auto-advanced to the next page.

----- Insert Figure 2 about here -----

Manipulation check. We asked participants, "In your new role, please consider how you would feel toward your new team when answering the following questions." Participants completed the same eight-item Sense of Power measure as in Study 1 (Anderson, John, & Keltner, 2012; $\alpha = .97$).

Perceptions of brokerage opportunities. After completing the first attention check and the manipulation check, we presented participants with all 12 possible pairs of advice relations (e.g., Anthony offers help and advice to Brent, Anthony offers help and advice to Chris, etc.) and asked them to indicate whether each statement was true or false. We again emphasized that the purpose of the study was to test memory, so they should do the best they could from memory alone. There were four opportunities to "fill in" a brokerage opportunity by misperceiving directional, nonexistent ties from Anthony to David, from David to Anthony, from Chris to David, and from David to Chris (see Figure 2). We measured *perceptions of brokerage opportunities* as a number between zero and four, representing the number of ties each participant misperceived as existing between Anthony, Chris, and David.

Brokerage action tendencies. We captured brokerage intentions with two questions concerning the coordination and control of information between each pair of people (the potential brokees) following Burt's (1992) emphasis on two aspects of brokerage: (a) brokerage as coordination; and (b) brokerage as control of the flow of information or resources. We asked:

> People sometimes come across information or ideas while speaking to one person that could be valuable or useful to another person. Considering what you know about who shares advice with whom in this team, how often would you *share or relay information between each of the following two team members*?

For the question concerning control of information, we asked them to indicate how often they would *seek to actively control the flow of information between each of the following two team members*. Participants responded to the questions about control and coordination on a five-point Likert scale from 1 (*never*) to 5 (*always*). Participants' average responses (across all six possible dyads) to the control and coordination questions were positively correlated ($r = .36$, $p < .001$), indicating that brokerage intention scores were related but conceptually and empirically distinguishable.

Results and Discussion

Manipulation check. Respondents in the high-power role reported a higher sense of power ($M = 5.74$, $SD = .83$) than those in the low-power role ($M = 2.64$, $SD = 1.06$), $t(328) = 29.72$, $p < .001$.

Hypothesis tests. In support of Hypothesis 1, we found that respondents in the high-power condition saw more ties between actually disconnected people and therefore fewer brokerage opportunities ($M = 1.61$, $SD = 1.33$) than respondents in the low-power condition ($M = 1.31$, $SD = 1.17$), $t(321) = 2.13$, $p = .03$, $d = .24$. But those in the high-power group were not significantly different from those in the low-power group in recalling ties between actors in the network who were actually connected, $p = .31$. Moreover, high-power group respondents were not significantly more accurate at recalling ties across the entire network ($M = 8.92$, $SD = 2.27$) than those in the low-power group ($M = 9.01$, $SD = 2.27$), $p = .72$. Thus, the results reflect a tendency for the powerful to fill in the blanks among disconnected people, rather than to be generally inaccurate in their recollections.

In support of Hypothesis 2, respondents in the high-power condition (relative to those in the low-power condition) expressed greater willingness to share or relay information between team members, whether there was an actual disconnect to be brokered (M_{HP} = 3.08, SD_{HP} = 1.14 vs. M_{LP} = 2.77, SD_{LP} = 1.05), $t(324) = 3.28$, $p = .001$, $d = .28$, or not (M_{HP} = 3.66, SD_{HP} = .92 vs. M_{LP} = 3.33, SD_{LP} = .89), $t(326) = 2.58$, $p = .01$, $d = .36$. The same pattern of results characterized respondents' willingness to control information between team members. Respondents in the high-power condition were more willing to control information flow across both disconnected people ($M = 2.80$, $SD = 1.11$) than individuals in the low-power condition ($M = 2.23$, $SD = 1.07$), $t(326) = 4.74$, $p < .001$); and more willing to control information flow across people who were already connected and who, therefore, did not need third-party brokerage (M_{HP} = 2.93, SD_{HP} = 1.16 vs. M_{LP} = 2.47, SD_{LP} = 1.08), $t(324) = 3.73$, $p < .001$, $d = .41$. Thus, respondents in the high-power condition exhibited greater willingness to broker across relationships, whether the potential brokees were disconnected from each other or not.

This experiment extends earlier findings in several directions. First, we replicated and extended the finding from Study 1 that feelings of power lead people to see fewer brokerage opportunities. This effect occurs in both naturally occurring networks (Study 1) but also in the internally valid setting of a controlled experiment. Second, the experiment helps provide causal evidence for this relationship. Finally, we showed that, although sense of power relates to perceiving fewer brokerage opportunities, feeling powerful, relative to experiencing little power, relates to being willing to broker, irrespective of whether there is a brokerage opportunity. Of course, although MTurk offers an accessible and demographically diverse panel of U.S. working adults (Buhrmester, Kwang, & Gosling, 2011; Mason & Suri, 2012), one possible limitation of our research is that this sample may lack representation from

different cultures or high-end executive ranks, thus restricting our ability to generalize to these contexts.

General Discussion

An enduring puzzle in the brokerage literature has been the wide variation in performance outcomes for individuals who occupy brokerage positions in social networks (e.g., Burt et al., 2013, p. 535). Occupants of brokerage positions are thought to enjoy a vision advantage – to not only perceive the disconnects among people in social networks, but also to recognize the potential for productively bridging across these contacts to enhance individual and organizational functioning (Burt, 2005). However, here we have highlighted two additional factors, beyond occupation of brokerage positions, which play an important role: accurate perception of brokerage opportunities, and willingness to act upon those opportunities. The two studies together show that people who feel powerful tend to exhibit a paradox of agency: They perceive fewer brokerage opportunities, yet (as in Study 2) they report themselves as more willing to take on brokerage activities. Our results thus suggest a partial answer to why mere occupancy of a brokerage position may be insufficient to generate this vision advantage: Those who feel powerful are likely to be blind to the gaps between people that represent brokerage opportunities.

In approaching the question of brokerage from a psychological perspective, we challenge two of the major sociological assumptions current in the network literature. First, we challenge the sociological assumption (e.g., Cook et al., 1983) that actual network positions provide opportunities even when the occupants of positions are ignorant of network structure and their own positioning. We introduce to network research the importance of the psychological sense of power, which is distinct from power reflected in the network position alone or formal rank, but which affects the extent to which the individual perceives the possibilities of brokerage action. As prior work has suggested, before the advantages of a

network position can be taken up, the individual has to mentally simulate the resources he or she perceives as available (Smith et al., 2012).

We also challenge the assumption that opportunity alone is sufficient to motivate pursuit of opportunity (Burt, 1992). In addressing repeated calls from scholars to provide greater insight into the social psychological foundations of brokerage (Burt et al., 2013; Kilduff & Tsai, 2003; Stovel & Shaw, 2012), we uncovered a tendency for people who felt powerful to express a willingness to broker, even when no brokerage opportunity existed, either in terms of the actual network, or the network people perceived (see Study 2). By contrast, people who felt they were lacking in power were less willing to broker.

In terms of future research, it may be that many individuals interpret missing connections not as opportunities (as noted by one of our reviewers) but as signs of discord to be avoided. We need to better understand the link between what the network structure affords and how the individual perceives the constraints and opportunities inherent in the network structure. Future work could explore how the psychological experience of power affects additional types of brokerage that individuals engage in, such as bringing people together (Obstfeld, 2005) or keeping people apart (Lingo & O'Mahony, 2010).

More generally, realizing the benefits of brokerage may depend on the joint combination of three factors: structural position, accurate perception of the structure, and willingness to act upon the opportunities provided by the structure. Moreover, all three variables may fluctuate over time, helping explain why some individuals benefit from brokerage at different points in their careers. Future research should examine the performance consequences of the interactions between these variables.

Our theory and findings open avenues for future research on the psychology of social networks as called for in a recent special issue (Casciaro et al., 2015). Whereas past research has emphasized the powerful nature of the brokerage role (e.g., Cook et al., 1983), we have

uncovered differences between structural power, as defined by one's structural opportunities, and feeling powerful. Our results suggest that those who feel less powerful are better at detecting brokerage opportunities in organizational settings. Future research can explore how those who feel powerful manage the paradox of being more willing to broker, yet less able to perceive brokerage. One possibility is that brokerage is most effective when those who feel less powerful assist more powerful colleagues in charting the brokerage opportunities available. Thus, brokerage might be most effective when it involves collective rather than individual action. Future research can also investigate the mediating mechanisms (such as a reliance on abstract construals) through which sense of power affects the tendency to perceive absent connections (missing links) in network relations.

The findings point to practical implications for those at both ends of the power continuum. Engaging in brokerage requires institutional standing (Burt, 2005), so newcomers to organizations may find themselves unable to exploit brokerage opportunities even if they recognize their availability (Burt, 1992). The path to brokerage influence for those who feel relatively powerless may require forging relationships with influential mentors (Sparrowe & Liden, 2005), and those who feel powerful can help those who feel less powerful engage in the kinds of instrumental networking that is often seen as aversive by those who feel disempowered (Casciaro, Gino, & Kouchaki, 2014).

In conclusion, those who experience power are ready and willing to engage in brokerage behavior, but may be unable to recognize where their efforts are likely to be required. The less powerful, by contrast, are likely to perceive brokerage opportunities accurately and, therefore, have opportunities to reap the rewards of brokerage. If our research has one overriding message, it is that power and brokerage, commonly thought to coexist, may be in a state of tension, such that the more power the individual feels, the less brokerage the individual perceives.

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Footnotes

[1] An ego network with only one alter received a score of zero because of insufficient alters for a brokerage opportunity to exist.

Table 1

Means, Standard Deviations, and Correlations for Study 1

Variable	Mean	SD	1	2	3	4	5	6	7	8
1. Age	34.44	8.29								
2. Gender	.40	.49	-.24**							
3. Rank	3.44	1.27	.62***	-.06						
4. Propensity to broker	5.81	.79	-.04	.13	.03					
5. Actual network size	.29	.14	.25**	-.15	.42***	.17*				
6. Perceived network size	.35	.21	.14	-.03	.10	.22**	.24**			
7. Actual network brokerage opportunities	.56	.25	.06	.01	-.01	.03	.05	.08		
8. Perceived network brokerage opportunities	.58	.38	.07	-.04	.15	.04	-.11	-.23**	-.05	
9. Sense of power	4.81	.90	-.03	-.07	.12	.22**	-.00	.08	.11	-.10

Note. $N = 162$. Gender is coded 1 for female, 0 for male. * $p < .05$ (two-tailed) ** $p < .01$ (two-tailed) *** $p < .001$ (two-tailed)

Table 2

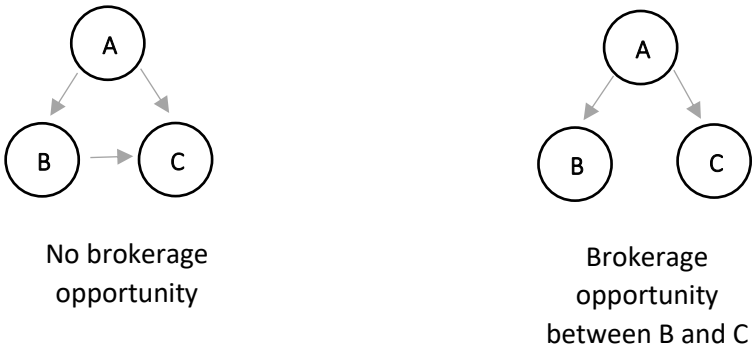
Results of a Fractional Logit Regression Model Predicting Perceived Brokerage Opportunities in Study 1

	Perceived Brokerage Opportunities			
	Model 1		Model 2	
Predictor	Coefficient	Standard error	Coefficient	Standard error
Intercept	6.82	5.79	7.91	5.82
Sales department	-.29	.36	-.32	.36
Customer service department	-.10	.47	-.06	.47
Creative design department	-.13	.33	-.08	.33
Age	-.00	.02	-.01	.02
Gender	-.26	.27	-.38	.27
Rank	.34**	.13	.41**	.13
Propensity to broker	.08	.06	.12	.07
Actual network size	-.09*	.04	-.10*	.04
Perceived network size	-.19**	.06	-.18**	.06
Actual brokerage opportunities	-.58	.49	-.77	.49
Sense of power			-.34*	.15
Pseudo R^2	.06		.07	
Log pseudolikelihood	-103.77		-102.28	
df	152		151	

Note. N = 162. We report unstandardized coefficients and robust standard errors. Actual network size reflects incoming ties (where the network is defined from the alters' perspective), whereas perceived network size reflects outgoing ties only (where the network is defined from ego's perspective). * $p < .05$ ** $p < .01$ (two-tailed)

Fig. 1

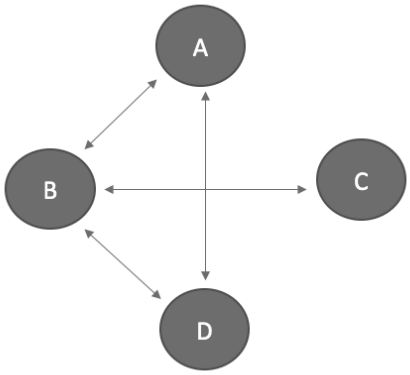
Perceived Brokerage Opportunities in the Organizational Advice Network in Study 1



Note. The left-hand diagram represents a transitivity score of 1, whereas the right-hand diagram represents a transitivity score of 0. Higher transitivity indicates fewer brokerage opportunities.

Fig. 2

Social Network for Study 2



Note. The network of relations participants learned in Study 2 (diagram not shown to participants). A = Anthony, B = Brent, C = Chris, D = David.

Appendix

Supplemental Analyses for Study 1

To increase comparability with prior brokerage research, we examined whether results changed in Study 1 when we included alternative measures of brokerage. We first tested whether the results would hold if we controlled for network constraint, which is often used to measure brokerage in structural network research (e.g., Burt, 1992). Network constraint is a composite statistic comprised of ego network density, size, and hierarchy (the extent to which an alter rivals ego in terms of similar contacts with ego's contacts). When we add network constraint as a control for structural position to the model reported in Table 2 (all other reported variables also included in the model), sense of power remains a significant predictor of perceived brokerage opportunities (b = -.38, 95% CI [-.67, -.09], p = .01).

The results are similar if we control for another variable that is often used to proxy brokerage – betweenness centrality (Freeman, 1977). The betweenness centrality of an actor is the extent to which the actor occupies a position on the shortest paths between all other actors in the network. When betweenness centrality is included instead of network constraint, sense of power remains a significant predictor of perceived brokerage opportunities (b = -.34, 95% CI [-.63, -.05], p = .02).

We also considered the issue of treating network constraint as an outcome measure. However, although some prior network research uses network constraint (Burt, 1992) to measure brokerage opportunities surrounding ego, network constraint is a composite statistic comprised of ego's network density, size, and the extent to which ego's network is characterized by hierarchy (i.e., the extent to which an alter rivals ego in terms of similar contacts with ego's contacts). We have no theory concerning how power may affect ego's perception of size, hierarchy, or density, so we therefore focused on transitivity, which

represents closure around the dyad, given that our theorizing focuses on gaps (missing connections) among ego's direct contacts.

Screening Criteria for Study 2

Here we provide further details about how we screened participants in the sample used in Study 2. We first included an attention check: After participants studied the network, we asked them to enter the name of their role in the company to ensure that participants had been paying attention. We excluded 41 participants for failing to report the correct role (final sample as above). At the end of the survey, we asked participants if they were distracted at any point while completing it, given that distractions could interfere with their ability to learn and recall the network relations. We also asked participants if they had written anything down. We stressed that their payment for the research would not be affected by anything that they wrote, and that providing clear and honest responses to these questions would aid data analysis. We removed six cases because individuals indicated that they had been distracted (final sample as reported). Finally, we read responses to the power manipulation to ensure that participants followed instructions; no participants were removed for failing to follow instructions.