RUNNING HEAD: Networks & Confrontation

Perceived Centrality in Social Networks Increases Women's Expectations of Confronting Sexism

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January 22, 2020

Word Count: 9,992

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Abstract

This paper integrates the study of intergroup relations and social network cognition, predicting that women who occupy central (vs. peripheral) advice network positions are more likely to confront a coworker's gender-biased comment. Study 1 offers correlational evidence of the predicted link between perceived advice network centrality and confronting among employed women, uniquely in advice (but not communication) networks. Study 2 replicates and investigates two possible mechanisms–perceptions of the situation as public and perceived risk of confronting. Study 3 rules out order effects and tests an additional mechanism (expectations of the network members). Study 4 is an experiment that shows people expect central (vs. peripheral) women to confront more, even when she is lower (vs. equal) power. Study 5 replicates the core hypothesis in retrospective accounts of women's responses to real workplace gender bias. Study 6 compares multiple potential mechanisms to provide greater insight into why centrality reliably predicts confrontation.

Keywords: confrontation, social networks, prejudice, sexism

Introduction

Consider two possible worlds: the same woman works on a team, and the only factor that varies between worlds is the pattern of informal relationships within her team. She is either sought after for advice by others on her team, or only one person on the team seeks her advice. If a male coworker (not in her network) makes a sexist comment that she disagrees with during a one-on-one conversation, does she feel equally able to speak up in both worlds? Or would her position in the advice network influence whether she feels able to confront his gender-biased comment? While intergroup relations has shifted toward a fuller consideration of dyadic interactions over the past decade (Shelton & Richeson, 2006), it has not considered whether and how the wider pattern of relationships around stigmatized individuals might shape their desired responses to prejudice. We seek to advance research in intergroup relations toward a fuller understanding of the psychology of stigmatized individuals by testing a theoretical perspective that considers the influence of social network cognition.

Social Networks

Individuals interact with others in daily life, and over time these repeated interactions form enduring relationships, known as social networks (Kilduff & Tsai, 2003). There are different types of social networks. For example, advice networks are made up of individuals who exchange advice with one another, whereas communication networks are formed between people who communicate with each other regularly in the course of a workday. The study of social networks seeks to understand how the patterns of interconnections between people within a given setting (e.g., an organization, team, community, etc.) shape their experiences and outcomes. A key insight of social networks research is that people in the same position within different networks (e.g., those who are similarly sought after for interactions) will have similar experiences (Brass, Galaskiewicz, Greve, & Tsai, 2004).

As a social species, people naturally attend to the patterns of interactions amongst those around them, accurately and reliably noticing their and others' social network positions (Freeman, 1992). The study of social network cognition shows that people have coherent, relatively accurate, and shared understandings of the meaning of certain social network positions (Brands, 2013). We propose that the study of social network cognition has much to offer the study of intergroup relations because networks are not just a group memberships– they contribute to people's self-schemas in ways that we suggest may shape their responses to intergroup bias. We begin to investigate this possibility by focusing on women's responses to an overt expression of sexism in the workplace.

Advice Network Centrality

In this research, we focus on one particular type of social network: advice networks. Individuals engage in the informal exchange of advice and assistance as they coordinate on work-related tasks (Brass et. al., 2004; Sparrowe, Liden, Wayne, & Kraimer, 2001), which is why advice networks are characteristic of workplace environments. However, some individuals are more sought after than others for advice. The metric that captures this difference is indegree centrality (which we refer to simply as *centrality* throughout the rest of the manuscript). Those who are sought after by many others for informal advice within their teams are *central* in the advice network, while those who participate less in the exchange of advice are *peripheral* (Wasserman & Faust, 1994).

Why would a woman's perceived advice network centrality shape her reaction to sexism in a dyadic interaction with someone from outside her network? Given that her network members are not present, and the person who communicated bias is not a part of the network, there is a strong null hypothesis that centrality has no effect on how women respond to sexist comments in this context. To the contrary, we propose that an individual's

understanding of and response to such a situation will be shaped by her position within her social network. We predict that when women see themselves as central (rather than peripheral) in their informal advice network, they would want to confront a sexist comment more. By the same token, when others see a woman as central in an advice network, we predict that they will expect her to be more willing to confront sexism. We build these theoretical propositions from the study of social network cognition, which suggests that centrality is not just a social network position. Rather, perceiving oneself (or someone) as central versus peripheral brings with it a set of associated cognitions about the situation and the self. Given this, we test multiple potential mechanisms that capture perceptions of the situation and the self, by which perceived centrality may shape women's likelihood of wanting to confront a sexist comment.

Does Perceived Centrality Shape Perceptions of the Situation? There are several theoretical reasons why perceived centrality could shape perceptions of the situation when a woman is faced with a sexist comment in an interaction with a co-worker. First, we propose that centrality in advice networks could afford a greater understanding of whether network members disagree with the comment and would support confrontation. Through their interactions, central individuals acquire more information, both about their jobs and organizations, and about their team members' thoughts and beliefs, than those who are peripheral (Sparrowe et al., 2001). These greater informational resources may give central (vs. peripheral) individuals a more accurate sense of the attitudes their network members hold. If central women believe or know that their network members would be offended by a gender-biased comment, they might be more likely to speak out to disagree with it than peripheral women who have less information about how their network members would perceive the comment. We test this possibility in Studies 3, 5, and 6. Second, we propose that central individuals might perceive less social and professional risk to confronting, relative to

peripheral women. Individuals who are central in advice networks are, by definition, less dependent on any single person compared to individuals who are peripheral in the network (Brass & Burkhardt, 1993). Taking action is less risky for those who have more social options: if one of their contacts is offended by their actions and severs their tie, central individuals still have many other exchange partners (Gargiulo & Benassi, 2000). Given that people are more likely to confront when perceived risks are low (Kaiser & Miller, 2001), central women might be more likely to speak out than peripheral women. We test this possibility in Studies 2-6.

Another perspective would suggest the opposite prediction: that perceived centrality will be associated with reduced intentions to confront because centrality might be associated with viewing the situation as more public than private. Since people who are more central have more exchange partners in their advice network, they may perceive themselves as being "on display" and thus see the situation as more public than those with fewer connections (Burt, 2005). Given that individuals are less likely to confront in public than in private (Stangor, Swim, Van Allen, & Sechrist, 2002), this raises the alternate possibility that central women would be *less* likely to confront sexism relative to peripheral women. We test this in Studies 2-4.

Does Perceived Centrality Shape Perceptions of the Individual? Network cognition documents that central individuals evoke different person schemas from peripheral individuals (Brands, Menges, & Kilduff, 2015). Because extroverted, knowledgeable, and popular people are more likely to attain central positions in advice networks (Fang et al., 2015), people learn this association and come to expect central individuals to have these qualities more than peripheral individuals. To test this possibility, we measured whether central women are seen as more competent, confident, knowledgeable, extroverted, and popular than peripheral individuals, and whether this difference would explain differences in

anticipated confronting (Study 6). Further, women who are central in their advice network are inherently more practiced at speaking their mind and sharing their perspective with others than women who are peripheral. As such, in Study 6, we test whether central individuals might be seen as more skilled at confronting, and therefore more likely to do so.

We focus our investigation of whether perceived centrality shapes intergroup dynamics on the workplace context because the expression of sexism in everyday interactions between coworkers continues to be prevalent (Ely, Meyerson, & Davidson, 2006; Swim, Hyers, Cohen, & Ferguson, 2001). We focus on women's desire to confront a sexist comment because women must want to engage in this action before actually confronting (Ashburn-Nardo, Morris, & Goodwin, 2008; Lindsey et al., 2015). Past research has focused on how individual characteristics (e.g., optimism, Kaiser & Miller, 2001, 2004; hardiness, Foster & Dion, 2004; trait activism, Hyers, 2007; Swim & Hyers, 1999) and situational factors (e.g., formal power, Ashburn-Nardo, Blanchar, Petersson, Morris, & Goodwin, 2014; Woodzicka & LaFrance, 2005; salient costs, Shelton & Stewart, 2004; public contexts, Stangor et al., 2002; risk to standing, Kaiser & Miller, 2001, 2004) can restrict confronting. However, relatively less research has identified situational factors that heighten women's desire to speak out (but see Rattan & Dweck, 2010), despite the well-documented benefits to both targets of bias and those who express bias that follow from confrontation (e.g., Czopp, Monteith, & Mark, 2006; Shelton, Richeson, Salvatore, & Hill, 2006; but see Kaiser & Miller, 2001).

The core contribution of the current research to the study of prejudice confrontation is to uncover a never before studied factor that shapes how much women who receive gender-biased comments feel able to confront. This investigation also advances the study of social networks by moving beyond the link between network cognition and networking behavior

(i.e., the formation of new ties, Janicik & Larrick, 2005; Shea & Fitzsimons, 2016) to investigate social network cognition as a resource for women in the face of a social threat.

Overview of Studies

We hypothesize that women's perceived centrality will increase anticipated confronting of a sexist statement. Study 1 provides an initial test of the predicted link between perceived advice network centrality and greater anticipated confronting, and ensures that this effect is unique to centrality in the advice network (as opposed to any type of network). Study 2 again tests the core hypothesis and investigates why, testing (1) the extent to which the situation was seen as public and (2) how risky it would be to confront. Study 3 is a preregistered confirmatory test that uses a different biased statement and addresses order effects by counterbalancing the scenario and network measure. This study also tests all three of the potential mechanisms that focus on perceptions of the situation.

Study 4 shifts to an experimental method and distinguishes centrality from power by testing whether central (vs. peripheral) individuals would still confront a higher- (vs. equal-) power individual more. Study 4 also tests a core proposition from the social network cognition perspective, that observers would exhibit the same expectations of central women confronting. Study 5 offers real-world evidence using retrospective accounts of women's responses to real sexist comments in their workplaces. Finally, Study 6 assesses and compares various situational and individual potential mechanisms to provide greater insight into why perceived centrality predicts confrontation. Across studies, all conditions and measures are reported in full. Data was collected in a single wave and only analyzed once recruitment was completed. Sample sizes were determined a priori based on a standard of 100 for correlational studies and minimum 50 per cell for experiments. Pre-registered studies which allow for confirmatory tests indicate so in the methods.

Study 1

Study 1 tested the hypothesis that perceived advice network centrality predicts women's intentions to confront a sexist comment. In this pre-registered correlational study (link: https://osf.io/8q7ds), we also tested whether the predicted effect would be unique to advice networks. Because advice and friendship networks overlap (Casciaro & Lobo, 2008), they would not be appropriate to compare. Instead, we compared advice and communication networks, which both involve the exchange of information, but which differ in the type of information exchanged (i.e., advice versus facts/requests related to work). We predicted that greater advice network centrality, but not communication network centrality, would predict greater anticipated confronting of a gender-biased statement.

Participants

Participants were 294 UK women on Prolific Academic (paid £2). Participants reported an average age of 34.92 years (*SD*=11.06); 272 self-identified as White, 8 Black British, 12 Asian, 1 Indian, and 9 other ethnicity (participants could choose multiple options in all studies, meaning that the sum of self-identifications may add to more than the number of participants reported).

Procedure

Only those who identified as women living in the United Kingdom and provided informed consent could enter the survey.

Networks assessment. We used a standard cognitive social network assessment (Brands et al., 2015). Respondents listed the initials of up to 10 members of their work team and then indicated ages, genders, ethnicities, and formal leadership responsibilities of each, as well as whether they were the leader. Participants were randomly assigned to complete a

matrix measure to report on either the network of advice relations (n=145) or communication relations (n=149) in their team. After reading instructions for how to use the matrix, participants in the *Advice Network* condition were asked, "Who would you go to for advice on work-related matters?" followed by a list of their coworkers' names. Respondents checked the names of those coworkers they sought advice from. Then, for each team member in turn, respondents also checked the names of coworkers whom that team member went to for advice. Thus, each respondent provided a complete network map concerning her perceptions of who shared advice relations with whom in the team[1]. Participants in the *Communication Network* condition completed the same procedure, except they were asked who communicates with whom in the team.

Scenario. Participants were presented with a scenario that described a work interaction in which a new male employee, John, makes a biased statement to them ("I'm really surprised at the types of people who are working here. When you get to the top level—a company like this—you expect only the best people here. I mean, I think they must be hiring associates just for diversity reasons. With all the women here, I wonder how long this company will stay on top." See SOM-Appendix A for full scenario). Previous research shows that this statement is reliably perceived as explicit bias (adapted from Rattan & Dweck, 2010, 2018).

Measures

Network Centrality *(Wasserman & Faust, 1994).* An advice (or communication) tie was said to be perceived by a respondent between person *i* and person *j* if the respondent indicated that person *i* asked person *j* for advice (or communicated with person *j*). We

[1] Individuals have generally accurate perceptions of the overall pattern of ties in their team, particularly advice ties which are readily observable (Brands, 2013).

calculated how central each respondent perceived themselves to be by counting the number of informal advice (communication) ties that respondents perceived themselves to receive from other members of their team.

Anticipated Confronting. After reading the scenario, participants completed the two-item confronting measure: how likely they would be to calmly but firmly express their disagreement to John, and how likely they would be to not express any disagreement to John (1=very unlikely to 7=very likely; Rattan & Dweck, 2010). Responses to the latter question were reverse-scored and, given their high correlation (r=.57, $p < .0001$), averaged to form mean likelihood of confronting (*Mean*=5.78, *SD*=1.25).

Team Characteristics. Larger teams entail a larger potential audience after the fact, and women may be more likely to confront when their network is composed of more women than men. We thus calculated and controlled for team size (a count of the number of people in the team) and gender composition of the team (proportion of the team who were women).

Demographics. Centrality is considered distinct from other types of status imbued in demographic characteristics or the power imbued in formal roles. To empirically support this perspective, we measured (in a standard demographics form) social status: education level (less than high school, high school, some university, 3-year university degree, 4-year university degree, master's degree, doctoral degree, professional degree), combined annual household income (1=under £20,000; 15=£150,000+), and subjective social status on a status ladder (1–9, Adler, Epel, Castellazzo, & Ickovics, 2000).

Results

Table 1 reports means, standard deviations, and correlations among study variables.

Anticipated Confronting. We ran a regression entering network type and centrality in step 1 and their interaction term in step 2. In support of the hypothesis, there was a significant *network type x centrality* interaction on anticipated confronting, *B*=.16, *SE*=.07, *p*=.02. The more women perceived themselves to be central in their team advice network, the more they reported wanting to confront the sexist statement, *B*=.11, *SE*=.05, *p*=.04. Women's communication network centrality was unrelated to anticipated confronting, *B*=-.05, *SE*=.05, *p*=.26.

Controlling for Team Characteristics. We repeated the analysis, controlling for team size and the proportion of the team who were women. Controlling for these team characteristics, which did not predict anticipated confronting, there was still a significant *network type x centrality* interaction on anticipated confronting, *B*=.15, *SE*=.07, *p*=.03. Advice network centrality was a significant predictor of anticipated confronting, *B*=.11, *SE*=.05, *p*=.04, while communication network centrality was not, *B*=-.04, *SE*=.05, *p*=.45.

Controlling for Status. Controlling for education, income, subjective social status, and formal leadership role, which did not themselves predict confronting, there was again (marginal) support for the *network type x centrality* interaction on anticipated confronting, *B*=.14, *SE*=.07, *p*=.06. Perceived advice network centrality was a nonsignificant but marginal predictor of anticipated confronting, *B*=.09, *SE*=.09, *p*=.09, while communication network centrality was not, *B*=-.04, *SE*=.07, *p*=.32.

Discussion

Study 1 shows that perceived advice network centrality uniquely increases women's intentions to confront a sexist statement; the same pattern does not emerge for the communication network. By controlling for demographic status markers like education level, income, subjective social status, and formal leadership position, this study also demonstrates

that centrality is not simply redundant with individual status characteristics, and the effect is not accounted for by differences in team size or gender composition.

Study 2

Study 2 replicates and extends the previous study by exploring why the centrality-confrontation link emerges. We hypothesized that perceived advice network centrality would predict greater anticipated confronting through less perceived risk, but that there would be no effect on how public the situation was seen as.

Method

Participants

Participants were 121 North American women recruited from Amazon's Mechanical Turk (paid $2). Participants reported an average age of 33.71 years (*SD*=9.18); 94 self-identified as White American, 12 African American, 6 Asian American, 6 Latino American, 2 Native American, 1 Indian American, and 17 did not specify their ethnicity.

Procedure

To enter the survey, participants had to indicate that they were a woman, a member of a team, and employed (either full- or part-time), and provide informed consent.

Networks assessment. Participants completed the measure described in Study 1 for the advice network.

Scenario. Participants responded to the same scenario described in Study 1.

Measures

Network Centrality. Centrality was calculated as in Study 1 for the advice network.

Anticipated Confronting. After reading the scenario described in Study 1, respondents indicated how likely they would be to calmly but firmly express their disagreement to John (1=extremely unlikely to 7=extremely likely, from Rattan & Dweck, 2010).

Public versus Private Context. We asked participants to indicate the degree to which they felt "that you were in a public versus private context" on a single-item, bipolar scale (1=very public, 6=very private), though we did not expect differences on this measure as the pattern would be at odds with our hypothesis.

Perceived Risk. Two items separately assessed how much participants thought they would lose professionally and socially if they spoke out (1=risked nothing or almost nothing, 6=risked everything or nearly everything, r=.69, p<.001), which were averaged to calculate perceived risk.

Team Characteristics. As in Study 1, we controlled for team size (a count of the number of people in the team) and gender composition of the team (proportion of the team who were women).

Demographics. We measured the same demographics as in Study 1, revised for a North American population: education level (less than high school, high school, some college, 2-year college degree, 4-year college degree, master's degree, doctoral degree, professional degree), combined annual household income (1=under $20,000; 15=$150,000+), and the subjective social status ladder.

Results

See Table 2 for means, standard deviations, and correlations among study variables.

Anticipated Confronting. In support of the hypothesis and replicating Study 1, the more women perceived themselves to be central in their team advice network, the more likely they were to report that they would confront the sexist statement, r=.25, p=.01.

Controlling for Team Characteristics. Regressing team size and proportion of the team who were women in step 1, which did not themselves predict anticipated confronting, advice network centrality (in step 2) remained a significant predictor of anticipated confronting, B=.16, *s.e.*=.06, p=.01.

Controlling for Status. Similarly, when we controlled for the demographic status and power variables measured (education, income, subjective social status, and formal leadership role) in step 1, which did not themselves predict confronting, advice network centrality was still a significant predictor of anticipated confronting, B=.15, *s.e.*=.06, p=.02.

Public versus Private Context. Perceived advice network centrality did not predict differences in the degree to which women thought the situation was public versus private, r=-.10, p=.29, as we predicted.

Perceived Risk. As predicted, the more central women perceived themselves to be, the less risk they perceived, r=-.2, p=.03. Given this pattern, we explored an indirect effect. Using the PROCESS macro (model 4; Hayes, 2012), we entered perceived advice network centrality as the predictor X, perceived risk as the mediator M, and confronting as the outcome Y. To the extent that women perceived themselves as central in their team advice network, they perceived less professional and social risk associated with confronting (B=-.10, SE=.05, p=.03). Furthermore, to the extent that respondents perceived confronting the biased statement to be risky, they were less likely to do so (B=-.31, SE=.11, p=.01). Based on a bootstrap sample of 5000 iterations, the 95% confidence interval for the indirect effect was (.0003, .0903), supporting an indirect effect of advice network centrality through perceptions

of risk on anticipated confronting. The direct effect of advice network centrality on anticipated confronting remained significant, B=.13, SE=.06, p=.02.

Discussion

Study 2 finds that women who perceive themselves to be more central in the advice network express greater intentions to confront a sexist statement than women who perceive themselves to be less central. Perceptions of risk partially accounted for the link between advice network centrality and confronting, though the direct effect remained significant. This effect is not explained by differences in perceptions of the setting as public, in the team size or gender composition, or in demographic status characteristics.

Study 3

Study 3 used a different biased statement and addressed the possibility that order effects (priming network position) explain the results by counterbalancing the scenario and network measure. Study 3 also explored whether social network centrality predicts confronting across contexts. On the one hand, perceived centrality in one's advice network at work might not automatically carry over into novel social interaction contexts. On the other hand, as a mental representation, one's understanding of their social network role could be carried into novel situations. We pre-registered (link: https://osf.io/qh8wc) the hypothesis that perceived centrality would predict greater desire to confront, predicted that this effect would not emerge at a party, and further predicted that order would not matter. Thus, Study 3 is a 2 (order: before vs. after) x 2 (context: work vs. party) x centrality (continuous) design. We also investigated three situational perceptions as possible mechanisms: perceptions of the situation as public (which we did not predict would account for the effect), perceived social and professional risk (predicted), and network member attitudes (predicted).

Method

Participants

The pre-registered target sample size was 850 employed women who worked in teams of at least four or more. We recruited a turkprime.com panel (paid $2). Though 875 people started the survey, 21 identified as men and 13 did not report gender so they were excluded prior to analysis since they did not meet the pre-registered inclusion criteria. This left 841 women: 85 self-identified as African American/Black, 35 Asian-American/Asian, 581 European American/White, 46 Hispanic/Chicano/Latino American, 3 South Asian Indian, 2 Native American, 3 Pacific Islander, 16 other, and 69 unreported; *Mean_age*=36.35 (*SD*=10.26). A power analysis based on the observed effect size of the main result in Study 2 found that a total sample size of 90 would be sufficient to detect an effect with power=.8 and alpha error probability=.05. Given the two between-subjects factors in this study (context and order), our sample size afforded sufficient power to detect the key relationship of interest.

Procedure

After giving their informed consent, participants were randomly assigned to complete the networks assessment either before or after reading the scenario (Order Condition).

Networks Assessment. We measured networks and calculated advice network centrality as in Study 1.

Context Manipulation. In the *Party* condition, participants read a scenario set at a friend's party, while in the *Work* condition, the scenario was set in their workplace (see SOM-Appendix A for full scenario). As in Study 1, the scenario described meeting John, who made a biased comment: "I am just so glad I didn't end up on a team with a woman manager.

Women are just too emotional to manage teams effectively, and those teams will just never rise to the top or be stars."

Anticipated Confronting. Anticipated confronting was measured as described in Study 1 (r=.82, $p < .001$) and averaged to form a mean score for likelihood of confronting.

Public versus Private Context. This was measured as described in Study 2.

Perceived Risk. Risk was measured and calculated as in Study 2, r=.53, p<.01.

Network Member Attitudes. Participants were reminded of the network contacts who they described as seeking their advice and asked how offended they would be by John's comment (1=not at all offended, 6=extremely offended), how sexist they would find the comment (1=not at all sexist, 6=extremely sexist), and how much their contacts would have expected them to confront (1=not at all, 6=extremely), α=.79. These items were averaged.

Manipulation Check. At the end of the study participants were asked to confirm (1) whether they completed the network measure before the scenario or after (1=scenario first, 2=networks first); (2) what the scenario setting was (1=work, 2=party); and (3) what John's comment was about (1=hiring women for diversity reasons, 2=women managers' emotionality, 3=the gender pay gap, 4=sexual harassment). Participants (N=141) who answered any of these three questions incorrectly were excluded prior to analyses, in line with our preregistration. We present the analyses using this preregistered exclusion criteria below, though the pattern of results is essentially unchanged without these data exclusions.

Demographics. Finally, participants completed a standard demographics measure, were debriefed, and paid.

Results

See Table 3 for means (overall and by condition), standard deviations, and correlations among study variables.

Anticipated Confronting. The 2 order (Before, After) by 2 context (Work, Party) by centrality regression on anticipated confronting yielded no main effect of display order, *B*=-.06, *SE*=.09, *t*=-.70, *p*=.48, and no main effect of context, *B*=.13, *SE*=.09, *t*=1.54, *p*=.12, but a significant main effect of centrality, *B*=.08, *SE*=.02, *t*=3.66, *p*<.001. The context x order interaction was not significant, *B*=.02, *se*=.09, *t*=.20, *p*=.84, nor was the centrality x order interaction, *B*=.001, *SE*=.02, *t*=.06, *p*=.96, the context x centrality interaction, *B*=-.02, *SE*=.02, *t*=-.92, *p*=.36, or the three-way interaction, *B*=-.01, *SE*=.02, *t*=-.52, *p*=.60. As expected, the order of the measures did not affect anticipated confrontation. Supporting our hypothesis, women who reported that they were central in their workplace advice networks were more likely to anticipate confronting a sexist comment. However, contrary to our pre-registered hypothesis, the two-way centrality by context interaction was nonsignificant. This suggests that women who believe they are central in workplace advice networks are more likely to feel they can confront bias, even outside the workplace.

Public versus Private Context. There were no significant main effects, two-way interactions, or three-way interaction on participants' ratings of the setting as public versus private, *t*s<1.72, *p*s>.08.

Perceived Risk and Network Members' Attitudes. The 2 order (Before versus After) by 2 context (Work versus Party) by centrality regression on perceived risk yielded only a significant main effect of centrality, *B*=-.05, *SE*=.02, *t*=-3.03, *p*=.003, as did the same analysis on network members' attitudes, *B*=.05, *SE*=.02, *t*=3.12, *p*=.002. Given this result, we explored both of these variables as potential mechanisms. Using Hayes (2012) PROCESS macro (model 4), we entered centrality as the predictor X, confrontation as the outcome Y,

network attitudes as the mediator M1, and perceived risk as the mediator M2 with 5000 iterations. Both indirect effects for risk and network attitudes were supported: the total indirect effect was *B*=.04, *SE*=.01, 95% CI [.02, .06], the indirect effect of network attitudes was *B*=.02, *SE*=.01, 95% CI [.01, .04], and the perceived risk indirect effect was *B*=.02, *SE*=.01, 95% CI [.01, .03], though the direct effect of centrality was still significant, *B*=.04, *SE*=.02, *t*=2.12, *p*=.03, 95% CI [.003, .07].

Discussion

Study 3 provides a pre-registered replication of the link between women's self-reported centrality in their advice networks and greater intentions to confront a sexist comment, using a different biased statement. As expected, the order of the measures did not moderate the effect, discounting a priming explanation. Unexpectedly, perceived advice network centrality shaped confrontation across both work and non-work contexts, raising the possibility that centrality might activate a set of associated cognitions about the individual (in addition to the situation), which might better explain the link with anticipated confrontation. These results pushed us to investigate a different category of mechanisms, focused on perceptions of the individual, when we return to the question of mechanism in Study 6. While we found support for indirect effects through both perceived risk and network attitudes, the direct effect remained suggesting the mechanism is multiply determined – even more reason to investigate this further in Study 6.

Study 4

Study 4 is an experiment (see SOM Study S1 for an initial experiment that also supports the causal hypothesis) that switches to the observer perspective to directly test a core social network cognition assumption. Because people have shared understandings of which network roles afford social capital, observers should also expect central (vs. peripheral)

women in the advice network to be more willing to confront a sexist comment. Further, Study 4 distinguishes social capital from power by manipulating whether the expression of bias comes from a peer (equal power) or a supervisor (higher power). Thus, Study 4 is a 2 network position (Central versus Peripheral) by 2 perpetrator rank (Supervisor versus Peer) between-subjects design. We hypothesized that participants would anticipate greater confrontation in the central condition, regardless of whether the source was a supervisor or peer.

Method

Participants

Using MTurk, we recruited 201 US women who received $2 each for participating. Of these, 7 participants were excluded on the a priori criterion of previous participation in our studies. This left 194 participants in the final sample (190 women, 4 men) who self-identified as 24 African American/Black, 11 Asian-American/Asian, 156 European American/White, 8 Hispanic/Chicano/Latino American, 1 East Indian, 1 Native American, and 1 no response, *Mean_age*=37.22 (SD=10.39).

Procedure

After informed consent, participants read about Erica, a member of the digital media team within a large professional services organization. They were randomly assigned to centrality condition and rank condition.

Advice Network Centrality Manipulation. Erica's role in the informal advice network of the team was described in words, accompanied by a network diagram with nodes (labeled with gender-neutral coworker's names) and lines (representing advice ties), depicting Erica's role in the advice network. Participants saw the same overall network in each condition—

only Erica's role changed. The *Central Network Role* condition (N=104, dummy code=2) described Erica as sought after for advice by everyone in the network; an accompanying network diagram depicted arrows from every team member to Erica. The *Peripheral Network Role* condition (N=90, dummy code=1) described Erica as being sought after for advice by only one person; in this condition, the accompanying network diagram depicted an arrow from one individual to Erica (see SOM-Appendix A for full manipulations).

Rank of Perpetrator. In the *Same Rank* condition (N=99), participants read the scenario from Study 1 adapted to reference Erica, while in the *Higher Rank* condition (N=95), participants read a modified version describing John as a new manager in Erica's company (thus indicating his higher formal power; see Appendix A-SOM for full scenario).

Anticipated Confronting. Confrontation was measured and calculated as in the previous study, r=.79, $p < .001$.

Public versus Private Context. Participants responded to the same item as in the previous study.

Perceived Risk. Risk was measured and calculated as before, r=.46, $p < .001$.

Attention Check. At the end of the study, participants were asked to identify (1) Erica's role in the advice network (1=many people ask Erica for advice, 2=few people ask Erica for advice); (2) John's role in the company (1=a new employee, 2=a new manager); and (3) what John's comment was about (1=hiring women for diversity reasons, 2=his boss, who is a woman, 3=working mothers demanding special treatment).

Demographics. Finally, participants completed a standard demographics measure, were debriefed, and paid.

Results

See Table 4 for overall means, standard deviations, and correlations among study variables; means by condition are below.

Anticipated Confronting. The 2 (advice network centrality: Central vs. Peripheral) x 2 (rank: Same vs. Higher) ANOVA on participants' expectations for Erica's confronting yielded significant main effects of advice network centrality, $F(193)=19.47$, $p < .001$, $n_p^2=.09$, and rank, $F(193)=5.42$, $p=.02$, $n_p^2=.03$. Participants who read that Erica was central in the advice network ($M=3.81$, $SD=.1$) expected her to confront more than those who read that she was peripheral ($M=3.12$, $SD=.11$). Participants who read about Erica interacting with a manager ($M=3.29$, $SD=.11$) expected her to confront less than participants who read that she interacted with a peer ($M=3.65$, $SD=.11$). This was qualified by a significant interaction, $F(193)=4.32$, $p=.04$, $n_p^2=.02$; see Figure 1. As predicted, when participants read that Erica held a central network position, they expected her to confront John to an equal degree, regardless of whether he was higher rank ($M=3.79$, $SD=.15$, N=52) or at the same rank ($M=3.83$, $SD=.15$, N=52), $F(190)=.03$, $p=.85$. In contrast, when participants read that Erica was peripheral, they thought she would be more likely to confront John when he was at her level ($M=3.47$, $SD=.16$, N=47) than when he was a manager, ($M=2.79$, $SD=.16$, N=43), $F(190)=9.05$, $p=.003$.

Perceived Risk. Participants saw confrontation as less risky when Erica was depicted as central ($M=5.3$, $SD=.46$) rather than peripheral ($M=6.84$, $SD=.5$) in the advice network, $F(190)=5.07$, $p=.03$. There was no difference in perceived risk when the perpetrator of the biased statement was a manager ($M=5.1$, $SD=.48$) versus the same rank ($M=6.64$, $SD=.49$) as Erica, $F(190)=2.7$, $p=.10$. The interaction between network role and rank was not significant, $F(193)=.2$, $p=.66$, $n_p^2=.001$.

Using Hayes (2012) PROCESS macro (model 5), we entered network role condition as the predictor X, rank of perpetrator as W the moderator of the direct effect, and perceived risk as the mediator M. When Erica was depicted as peripheral, participants saw confronting as riskier, B=1.51, SE=.69, p=.03, and risk, in turn, predicted lower anticipated confronting, B=-.1, SE=.01, $p < .0001$. Based on a bootstrap sample of 5000 iterations, the 95% confidence interval for the indirect effect was (-.31, -.28), suggesting support for the indirect effect. The direct effect of network role, moderated by the status of the perpetrator, remained significant, CI (-1.12, -.04).

Discussion

These results provide causal evidence for the centrality-confrontation relationship and disentangles perceived centrality and power, given the effects emerged even when a central woman was lower power. Because the effect replicated with observers, this study contributes empirical support to the argument that perceptions associated with central (vs. peripheral) advice network roles drive the effect.

Study 5

To address potential concerns about real-world validity, Study 5 explores network centrality and women's actual confrontations of gender-biased comments. While previous research suggests that women may overstate whether they will confront bias (Swim & Hyers, 1999), no extant research (to our knowledge) questions the validity or accuracy of women's recollections of responding to a past biased statement. There is no a priori reason to doubt the veracity of women's accounts of real workplace bias or their ability to accurately remember and report their reactions. This is an established approach (Rattan & Dweck, 2018) that benefits real-world validity by examining the influence of perceived advice network centrality on confronting in varied contexts, complex situational and interpersonal dynamics,

and across a wider variety of biased statements. Study 5 thus returned to a correlational design.

Method

Participants and Design

Only women who indicated they were a member of a team and working full- or part-time were able to enter the survey. Respondents were 402 North American women employees recruited from MTurk (paid $2): 5 self-identified as African American, 3 Asian American, 86 White American, 1 Latino American, 1 Native American, 216 other, and 90 did not report; *Mean_age*=35.77 years (*SD*=10.05).

Procedure

Networks Assessment. Advice networks and centrality were measured and calculated as in the previous correlational studies.

Everyday Bias. Participants were asked to recall and describe their most recent experience with "explicit sexism" in their workplace. We used increasingly specific questions to funnel only women who had relevant experiences of bias (direct, verbal expressions of bias) into the measures (versus structural, vicarious, or other forms of bias). First, participants read: "Explicitly sexist statements are defined as someone verbally endorsing negative gender stereotypes or hostility toward women. Do you understand this definition of explicitly sexist statements?" Participants who indicated "yes" were asked, "Have you ever been in a situation where a coworker made a statement directly to you in a conversation that either endorsed gender stereotypes, was sexually harassing, or expressed an explicitly sexist attitude?" Participants who indicated that they did not understand the definition of sexism (*N*=7) or had not directly experienced a sexist incident (Total *N*=333; of this N=204 reported not

experiencing sexism at work, N=51 reported hearing stories from others that suggest sexism, N=22 reported having witnessed sexism toward other women, and N=56 reported experiencing indirect sexism such as being interrupted or receiving less favorable treatment than men) were taken to exploratory measures designed for another program of research and did not complete the dependent variables for this study.

Those who indicated having experienced an incident of sexism in their workplace were then asked to describe the incident by checking various descriptions of it: "my coworker said that women are weak; my coworker said that women's work is inferior in quality or that women are incompetent; my coworker said that women are poor managers compared to men; my coworker said that working with men is better than working with women; my coworker said something sexually inappropriate; my coworker said that women need to do the childcare and housework; my coworker made a sexist joke; my coworker said that women do not belong in the workplace." These categories represented the most common descriptions from a review of over 400 women's retrospective accounts of overt bias which were collected for other research.

Confrontation. Participants then selected how they responded to the biased comment from the following options: "I spoke up to verbally address the person who made the statement, communicating disagreement with what was said or that the statement was not acceptable; I communicated that I was displeased with the statement in an indirect way; I continued with the work task and did not speak out to address the statement made; I said nothing." Those who chose the first option were coded as having confronted, while all other responses were coded as not confronting (1=confronted, 0=did not confront). As confirmation of the classifications, participants also described the experience and their response in their own words.

Situational Characteristics. Participants indicated the gender and organizational role of the perpetrator (supervisor, peer, subordinate, coworker from a different team, or a customer), how long ago the incident occurred, and whether other people witnessed the statement. We also collected participants' subjective assessments of how offensive the incident was (1=not at all offensive to 7=very offensive).

Retrospective Risk. Participants completed the 2 items used previously and rated how much they "put themselves on the line" in confronting the statement (1=not at all to 6=completely; α=.76). These three items were averaged.

Retrospective Network Member Attitudes. Participants were next reminded of the network contacts who they described as seeking their advice and completed the three items described in Study 3.

All participants completed items about the frequency of bias, which were included as a pilot for future research and are not discussed further. Finally, participants completed a standard demographics form.

Results

See Table 5 for overall means, standard deviations, and correlations among study variables.

Experiences of Sexism. Sixty-nine individuals said they could recall an incident of direct sexism, amounting to 53.49% of women who reported experiencing any type of direct sexism (see Table 4 for means, standard deviations, and correlations among the study variables for this sample). This represents the final sample for this study—all analyses were on this final sample (1 self-identified as African American, 16 White American, 1 Native American, 36 other, and 15 did not report; *Mean_age*=35.09 years, *SD*=9.12).

Confronting. Women who reported being central in their advice network were more likely to report having confronted an expression of gender bias, r=.34, p<.004.

Team Characteristics. We ran a regression with team size and the proportion of the team who were women in step 1, advice network centrality in step 2, with reported confronting as the dependent variable. We found that controlling for these team characteristics, neither of which significantly predicted confronting, advice network centrality remained a significant predictor of anticipated confronting, B=.06, SE=.03, t=2.43, p=.02.

Controlling for Status. In another regression, we entered the power and status variables measured (formal leadership role, education, income, and subjective social status) as predictors in step 1, advice network centrality in step 2, with reported confrontation as the dependent variable. Controlling for these status characteristics, of which only formal leadership position was a significant predictor, centrality was still a significant predictor of confronting, B=.06, SE=.02, t=2.78, p=.007.

Public versus Private Context. Controlling for whether other people witnessed the statement, centrality remained a significant predictor of confronting, B=.07, SE=.02, t=2.94, p=.004.

Retrospective Risk. Using Hayes (2012) PROCESS macro (model 4), we entered centrality as the predictor X, self-reported confronting as the outcome Y, and retrospective risk as the mediator M with 5000 iterations. The model was not supported (95% CI: -.02, .23) because centrality did not predict retrospective risk, B=-.09, SE=.06, t=-1.52, p=.13.

Retrospective Network Member Attitudes. The same model with network attitudes as the mediator M was not supported (95% CI: -.02, .14), although centrality predicted women's perceptions of their network members' attitudes, B=.12, SE=.05, t=2.19, p=.03.

Discussion

The more women reported centrality in their team advice network, the more likely they were to report having confronted gender bias in their actual workplace. Unlike in the previous studies, we did not find evidence in support of either perceived risk or network member attitudes as mechanisms.

Study 6

Studies 1–5 offer consistent evidence that perceived advice network centrality predicts women's anticipated and recalled confrontation of gender-biased comments—but not why. While we found partial support for an indirect effect through risk perceptions in Studies 2–4, this did not replicate in Study 5. Similarly, while we found partial support for an indirect effect through network member attitudes in Study 3, this did not replicate in Study 5. Our final study further investigates mechanism. We again assessed perceived risk and network member attitudes, but we also expanded our consideration of mechanisms to assess whether social network cognition associated with centrality activates different schemas of the individual. Specifically, we tested whether a central (vs. peripheral) network position would foster the perception that a woman is competent, confident, knowledgeable, extroverted, popular, or skilled at confronting, and whether these perceptions might explain the link between advice network centrality and confrontation.

Method

Participants

Participants were 304 UK adults recruited from Prolific Academic (paid £2). Of these, 6 participants were excluded on the a priori criterion of failing the attention checks. This left

298 participants in the final sample (296 women, 2 men) who self-identified as 5 Black, 14 Asian, 265 White, and 14 no response; *Mean_age*=35.28 (SD=11.39).

Procedure

After informed consent, participants read the Erica scenario from Study 4 and were randomly assigned to advice network condition.

Advice Network Centrality Manipulation. This was the same manipulation of *Central* (N=151) versus *Peripheral* (N=149) network position as in Study 4.

Anticipated Confronting. Confrontation was measured and calculated as in Study 1, (r=.79, $p < .001$).

Perceived Risk. Risk was measured and calculated as in Study 2, r=.44, $p < .0001$.

Perceived Skill at Confronting. Two items measured perceived skill at confronting: the extent to which participants thought (1) Erica was better than most people at speaking up to address a biased statement and (2) whether compared to most people, Erica would be more skilled at confronting sexism (1 = strongly disagree to 7 = strongly agree), r =.72, $p < .0001$, which were averaged.

Perceived Personal Qualities. Participants reported the extent to which they saw Erica as *competent, confident, knowledgeable, extroverted,* and *popular* (1=not at all, 6=extremely).

Network Member Attitudes. The same three items as in Study 3 measured network member's attitudes, α=.76.

Attention Check. At the end of the study, participants were asked to identify (1) Erica's role in the advice network (1=many people ask Erica for advice, 2=few people ask

Erica for advice); and (2) what John's comment was about (1=hiring women for diversity reasons, 2=his boss, who is a woman, 3=working mothers demanding special treatment).

Demographics. Finally, participants completed a standard demographics measure and were debriefed.

Results

See Table 6 for overall means, standard deviations, and correlations among study variables; means by condition are below.

Anticipated Confronting. An independent samples *t*-test indicated a significant effect of advice network centrality on confronting, $F(296)=12.66$, $p<.0001$. Participants in the central condition ($M=4.21$, $SD=.81$) expected Erica to confront more than those in the peripheral condition ($M=3.66$, $SD=1.03$).

Perceived Risk. No differences in perceived risk emerged: central ($M=2.73$, $SD=1.25$), peripheral ($M=2.83$, $SD=1.83$), $F(296)=1.41$, $p=.24$.

Perceived Skill at Confronting. No differences in skill at confronting emerged, central ($M=5.11$, $SD=1.03$), peripheral ($M=4.18$, $SD=1.1$), $F(296)=.09$, $p=.77$.

Perceived personal qualities. No differences emerged for ratings of competence, central ($M=5.19$, $SD=1.02$), peripheral ($M=4.04$, $SD=.91$), $F(296)=2.08$, $p=.15$, or extroverted, central ($M=4.21$, $SD=1.16$), peripheral ($M=2.93$, $SD=1.25$), $F(296)=2.76$, $p=.10$. However, participants in the central condition perceived Erica as more confident ($M=5.05$, $SD=.89$), knowledgeable ($M=5.37$, $SD=.8$) and popular ($M=4.79$, $SD=.95$) than those in the peripheral condition (confident $M=3.72$, $SD=1.22$; knowledgeable $M=3.95$, $SD=1.16$; popular $M=2.85$, $SD=1.2$), confident $F(296)=28.84$, $p< .0001$, knowledgeable $F(296)=12.64$, $p< .0001$, popular $F(296)=11.08$, $p< .001$.

Network Member Attitudes. Participants in the central condition (*M*=4.96, *SD*=.8) perceived Erica's network members' attitudes more positively than those in the peripheral condition (*M*=4.56, *SD*=.92), *F*(296)=4,78, *p*=.03.

Mechanisms. Using Hayes (2012) PROCESS macro (model 4), we entered network role condition as the predictor X, confidence, knowledgeable, popular (included because the main effect was marginal), extroverted, and network attitudes as the mediators M. The model was supported. When Erica was depicted as central, participants saw her as more confident (*B*=1.33, *SE*=.13, *p*<.0001), knowledgeable (*B*=1.42, *SE*=.12, *p*<.0001), popular (*B*=1.94, *SE*=.13, *p*<.0001), and extroverted (*B*=1.28, *SE*=.14, *p*<.0001) than when she was peripheral, and they thought her network members would want her to confront more (*B*=.4, *SE*=.1, *p*<.0001). Confidence (*B*=.31, *SE*=.08, *p*<.0001) and network member attitudes (*B*=.28, *SE*=.06, *p*<.0001), in turn, predicted anticipated confronting, whereas knowledgeable (*B*=-.08, *SE*=.08, *p*=.29), popularity (*B*=-.002, *SE*=.06, *p*=.97) and extroverted (*B*=.01, *SE*=.05, *p*=.26) did not. Based on a bootstrap sample of 5000 iterations, the 95% confidence interval for the indirect effects were: confident (.17, .7), network member attitudes (.04, .21), knowledgeable (-.35, .11), popular (-.22, .2), and extroverted (-.11, .15). The direct effect of network role was not significant, CI (-.14, .38). Perceived confidence and network attitudes account for the effect of network position on expectations of confronting.

Discussion

Study 6 again replicates the hypothesized effect—centrality increases anticipated confrontation—and offers a fuller investigation of the process. The link between perceived centrality and confrontation is multiply determined, explained through associated cognitions about the situation (perceptions of network members' attitudes) and about the individual woman in the situation (seeing her as more confident). The key contribution in our work is to

identify a causal precursor that fosters both of these perceptions – advice network centrality. Of course, it will be important for future research to investigate whether confidence is also a precursor to network centrality. Relatedly, future work might also test these mediators again in a correlational study with networks as a measured (rather than manipulated) variable, to see whether risk again emerges as a mechanism when the scenario is experienced from the first-person perspective.

General Discussion

Across six studies, we found support for the hypothesis: perceived centrality in advice networks shapes expectations of how women will respond to sexist comments. Women who reported being more central in their workplace advice networks anticipated being more likely to confront (Studies 1–2), even outside their workplace (Study 3), and were more likely to report having confronted in a real-life situation (Study 5). We also found a causal link: observers expected a central (vs. peripheral) woman to confront a sexist comment more (Studies 4, 6, SOM S1). The core effect of interest replicated across different biased statements, about diversity hiring and women's emotionality, and diverse real world gender bias. The effect held controlling for demographic markers of status and power (Studies 1–3), and even when a manipulation represented a woman in a low-power role (Study 4). Study 3 ruled out the concern of priming due to order effects. Our best evidence for mechanism across studies suggests that network members' attitudes and perceptions of confidence together explain the link between perceived centrality and anticipated confrontation. While risk perceptions emerged as a mediator when we studied it from the confronter's perspective in early studies, and centrality may be associated with lower risk perceptions, later studies did not replicate the indirect effects from the perspective of observers. Future research should explore these dynamics further, as these results suggest that observers may not accurately forecast risk perceptions in situations involving the expression of a biased comment.

Earlier, we emphasized the strength of the null hypothesis that social network position would have no impact on how women felt they could respond to a sexist comment from someone outside of the network, in a moment when network members are absent. Yet, we find consistent support for a link between perceived centrality and how women want to (and are expected to) respond to bias. In doing so, our work advances theories of intergroup relations (Allport, 1979; Goffman, 1963; Tajfel & Turner, 1986) that have long held that meaningful group memberships can develop both along dimensions of demographic characteristics and among self-selected groups. As research on intergroup relations works to expand and incorporate the reality that no one person holds just one social identity group membership (i.e., intersectionality, Shields, 2008) and that many individuals carry multiple group memberships (Markus & Kitayama, 1991; Shih & Sanchez, 2005), our findings highlight informal social networks as a key yet understudied aspect of stigmatized individuals' social identities. Our research also contributes to the study of social networks by moving beyond prior work's focus on the informational benefits of centrality *within* the network (Brands, 2013; Sparrowe et al., 2001). By contrast, our work shows that centrality prompts action *outside* of the networks where women have information about individuals' attitudes towards gender bias and confronting. Whether this has positive or negative consequences for women who confront bias is a question for future research.

Integrating social network cognition and intergroup dynamics has the potential to move the field forward in developing a more realistic and nuanced understanding of the experiences of those who face intergroup bias. Following the approach of the current work, future research should investigate whether advice network centrality not only releases women to confront, but facilitates speaking out in their natural style (e.g., angry or emotional confrontation) without backlash. Research should also test whether social network cognition similarly shapes racial and sexual orientation minorities' responses to biased statements, as

well as allies' and majority group members' likelihood of confronting. Social network positions draw out similar behaviors from diverse individuals, suggesting that centrality may facilitate confrontation by both members of underrepresented and majority groups. A more complex question, from the social networks perspective, would be how individuals respond to an expression of bias from inside their network. Studying this question would require assessing the position of both the communicator of bias and the target of bias in order to fully understand the relevant network dynamics.

One limitation is that we do not experimentally manipulate women's advice network centrality in a real-world situation involving bias. Although it may be possible to simulate informal advice ties in the lab (and future work should explore this), the extent to which this is a valid manipulation of the construct we sought to study in the current work is questionable. This is because informal ties develop over the course of repeated interactions and thus the confidence and understanding of network members' attitudes associated with centrality likely takes time to develop. Future research should manipulate social network centrality, perhaps through constructing multi-week work interactions among a group where bias then emerges, given the unethicality of randomly assigning women to a real-life experience of sexism in actual workplaces. This would also allow the possibility of exploring whether women respond differently to bias that comes from within the team (vs. externally), depending on their network role, as well as the role of positive versus negative ties in shaping responses to bias.

Conclusion

The present research highlights that social networks and women's perceived positions within them matter for how women feel they can react gender bias in the workplace. This work, therefore, opens a new direction for the study of intergroup relations, through

understanding how individuals' perceptions of the broader pattern of social networks around them affect intergroup dynamics.

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Tables

Table 1. Study 1: Means, Standard Deviations, and Correlations among Study Variables (*N*=294)

Variables	Mean	*SD*	Comm Mean	Comm SD	Advice Mean	Advice SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Perceived centrality	3.21	2.22	4.05	2.16	2.36	1.95	-														
2. Network type (1=communication, 2=advice)	1.49	.50	1.00	.00	2.00	.00	-.38	-													
3. Anticipated confronting	5.80	1.21	5.88	1.15	5.72	1.27	.05	-.07	-												
4. Team size	5.89	2.11	5.86	2.01	5.93	2.22	.43	.02	-.03	-											
5. Proportion of women on team	.69	.28	.69	.28	.68	.27	-.06	-.03	-.04	-.06	-										
6. Leadership role	.18	.39	.21	.41	.16	.37	.13	-.03	-.03	-.10	-.04	-									
7. Combined annual household	4.03	2.59	3.96	2.42	4.10	2.76	.07	.03	.03	.05	-.03	.22	-								
8. Subjective social status	4.97	1.50	4.97	1.41	4.96	1.60	.17	-.00	.07	.02	-.02	.30	.35	-							
9. Less than high school	.00	.06	.01	.08	.00	.00	-.06	-.06	-.06	.11	-.14	-.05	-.07	-.16	-						
10. High school	.27	.44	.26	.44	.28	.45	-.10	.03	-.02	-.06	-.03	-.08	-.13	-.11	-.04	-					
11. Some university	.15	.36	.17	.38	.13	.34	.02	-.06	.05	.03	.01	-.01	-.07	-.04	-.03	-.26	-				
12. 3-year university degree	.26	.44	.26	.44	.26	.44	.03	.01	-.04	-.10	.13	-.00	.07	.05	-.03	-.36	-.25	-			
13. 4-year university degree	.12	.32	.12	.33	.12	.32	.00	-.01	-.00	.01	-.05	-.03	.04	.06	-.02	-.22	-.16	-.22	-		
14. Master's	.14	.34	.15	.36	.12	.32	.10	-.05	.02	.07	-.04	.03	.02	-.02	-.02	-.24	-.17	-.23	-.15	-	
15. Professional degree	.04	.20	.01	.12	.07	.25	-.01	.00	.07	.01	-.06	.12	.02	.19	-.01	-.09	-.06	-.09	-.05	-.06	-

16. PhD	.02	.14	.02	.14	.02	.14	-.01	.14	-.04	.11	.01	.13	.18	.06	-.01	-.13	-.09	-.12	-.08	-.08	-.03

Correlations > |.12| are significant at $p < .05$

Table 2. Study 2: Means, Standard Deviations, and Correlations among Study Variables. (*N*=121)

Variables	Mean	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Perceived advice network centrality	2.32	2.42	-													
2. Anticipated confronting	5.64	1.53	.25	-												
3. Perceived risk	2.56	1.23	-.20	-.29	-											
4. Public vs. private context	3.76	1.25	-.10	.08	-.05	-										
5. Team size	6.03	3.46	.45	.09	-.07	.11	-									
6. Proportion of women on team	.51	.28	.24	-.05	.00	.09	.46	-								
7. Leadership role	.21	.41	.33	.12	.03	.05	-.10	-.00	-							
8. Combined annual household	5.13	2.95	.02	-.05	-.05	.05	.07	.02	-.09	-						
9. Subjective social status	4.52	1.58	-.05	-.04	.24	-.13	.04	-.04	.00	.59	-					
10. High school	.07	.25	.09	.07	.17	.08	.05	-.04	-.07	-.09	-.12	-				
11. Some college	.30	.46	.20	-.01	-.03	-.00	.23	.15	-.11	-.21	-.24	.41	-			
12. 2-year college degree	.41	.49	.17	-.05	-.18	-.03	.22	.28	.06	-.22	-.18	-.22	.50	-		
13. 4-year college degree	.51	.50	.12	-.02	-.06	-.04	.23	.26	.14	.11	.12	-.27	-.67	-.14	-	
14. Master’s	.38	.49	.05	-.02	.07	-.04	.18	.18	.00	.19	.19	-.21	-.51	-.65	.59	-
15. Professional degree	.05	.22	-.13	.07	.15	.08	-.03	.09	-.07	.16	.24	-.07	-.17	-.22	-.27	.15

Correlations > |.17| are significant at $p < .05$.

Table 3. Study 3: Means, Standard Deviations, and Correlations among Study Variables across Conditions. (*N*=841)

Variables	Overall Mean	Overall SD	Networks First Mean	Networks First SD	Networks Second Mean	Networks Second SD	Work Mean	Work SD	Party Mean	Party SD	1	2	3	4
1. Perceived advice network centrality	3.18	2.59	3.48	2.61	2.94	1.56	3.01	2.49	3.37	2.69	-			
2. Anticipated confronting	5.81	1.41	5.89	1.40	5.74	1.42	5.73	1.46	5.90	1.34	.15	-		
3. Public vs. private context	3.63	1.60	3.63	1.60	3.64	1.60	3.71	1.64	3.55	1.56	-.05	-.05	-	
4. Perceived risk	2.33	1.17	2.21	1.13	2.42	1.19	2.36	1.18	2.29	1.15	-.13	-.28	-.03	-
5. Network attitudes	5.07	1.00	5.09	.96	5.05	1.04	5.06	1.03	5.07	.98	.12	.43	-.04	.11

Correlations > |.11| are significant at $p < .05$.

Table 4. Study 4: Means, Standard Deviations, and Correlations among Study Variables across Conditions. (*N*=194)

Variables	Overall Mean	Overall SD	Peripheral Mean	Peripheral SD	Central Mean	Central SD	Same rank mean	Same rank SD	High rank mean	Higher rank SD	1	2	3	4
1. Rank condition (1=same, 2=higher)	1.49	.50	1.50	.50	1.48	.50	1.00	.00	2.00	.00	-			
2. Centrality condition (1=peripheral, 2=central)	1.46	.50	1.00	.00	2.00	.00	1.47	.50	1.45	.50	-.02	-		
3. Anticipated confronting	3.50	1.13	3.81	1.02	3.14	1.16	3.66	1.07	3.34	1.18	-.14	-.29	-	
4. Perceived risk	6.00	4.81	5.30	4.99	6.81	4.47	5.48	4.92	6.55	4.65	.11	.16	-.49	-
5. Public vs. private context	5.22	3.59	4.74	3.40	5.78	3.73	5.25	3.58	5.19	3.62	-.01	.14	.03	.09

Correlations > |.11| are significant at $p < .05$.

Table 5. Study 5: Means, Standard Deviations, and Correlations among Study Variables. (*N*=69)

Variables	Mean	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Perceived advice network centrality	3.00	2.57	-														
2. Reported confronting	.51	.50	.34	-													
3. Retrospective risk	3.35	1.33	-.18	-.38	-												
4. Network attitudes	4.52	1.18	.60	.21	.04	-											
5. Public vs. private context	1.74	.44	-.03	-.06	-.01	-.20	-										
6. Team size	6.84	2.60	.45	.19	-.12	.01	.13	-									
7. Proportion of women in team	.59	.28	.08	.01	-.27	.12	.00	-.23	-								
8. Leadership role	1.68	.47	-.26	-.32	-.05	-.13	.08	-.09	.07	-							
9. Combined annual household	4.23	2.61	.17	.07	.09	.23	-.14	-.12	-.21	-.11	-						
10. Subjective social status	5.06	1.38	.06	.06	-.04	.12	-.19	-.06	.05	-.21	.26	-					
11. High school	.12	.32	-.04	-.01	-.15	.17	-.09	-.05	-.07	.23	-.10	-.25	-				
12. Some college	.23	.43	-.12	-.01	-.16	-.13	.17	.09	.08	.29	-.18	-.02	-.20	-			
13. 2-year college degree	.12	.32	.02	-.01	.16	-.02	.11	-.01	.02	-.01	.04	-.25	-.13	-.20	-		
14. 4-year college degree	.32	.47	.05	-.20	.18	-.06	.12	-.01	.02	-.03	-.12	.11	-.25	-.38	-.25	-	
15. Master’s	.16	.37	.11	.19	-.01	-.07	-.19	.09	-.15	-.42	.25	.24	-.16	-.24	-.16	-.30	-
16. Professional degree	.06	.24	-.02	.12	-.09	.24	-.28	-.20	.12	-.11	.27	.13	-.09	-.14	-.09	-.17	-.11

Correlations > |.24| are significant at $p < .05$.

Table 6. Study 6: Means, Standard Deviations, and Correlations among Study Variables. (*N*=298)

Variables	Mean	*SD*	Peripheral Mean	Peripheral SD	Central Mean	Central SD	1	2	3	4	5	6	7	8	9	10
1. Centrality condition (1=peripheral, 2=central)	1.50	.50	1.00	.00	2.00	.00	-									
2. Anticipated confronting	3.94	.96	3.66	1.03	4.21	.81	.29	-								
3. Risk	2.78	1.22	2.83	1.18	2.73	1.25	-.04	-.20	-							
4. Perceived skill at confronting	4.65	1.16	4.18	1.10	5.11	1.03	.40	.44	-.11	-						
5. Competence	4.62	1.12	4.04	1.02	5.19	.91	.51	.39	-.11	.52	-					
6. Confident	4.39	1.26	3.72	1.22	5.05	.89	.53	.48	-.12	.60	.81	-				
7. Knowledgeable	4.66	1.22	3.95	1.16	5.37	.80	.58	.38	-.07	.52	.83	.84	-			
8. Extroverted	3.57	1.36	2.93	1.25	4.21	1.16	.47	.35	-.04	.51	.55	.67	.59	-		
9. Popular	3.83	1.45	2.85	1.20	4.79	.95	.67	.34	-.08	.54	.59	.67	.69	.67	-	
10. Network member attitudes	4.76	.88	4.56	.92	4.96	.80	.23	.42	-.05	.39	.44	.43	.38	.34	.31	-

Correlations > |.12| are significant at $p < .05$.

Figures

Figure 1. Study 4: Anticipated confrontation by condition (*N*=194). Error bars represent standard errors of the mean.