Self-Affirmation Increases Men's Openness to Women's Dominance Behaviors

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Abstract

There is growing attention to the importance of factoring men's experience into theorizing around increasing women's advancement in organizations. Past research has documented that women face stronger penalties than men for displaying dominance behaviors (Williams & Tiedens, 2016). Recent research shows that men perceive negotiations and competition, especially against women, as activities that could threaten their masculinity and social status (Mazei et al., 2021), making them particularly sensitive to women's dominance displays. We theorize that men experience anxiety when interacting with women displaying dominance behaviors (e.g., women initiating negotiation or competing in a masculine contest) which decreases their willingness to work with them. We propose and test a self-affirmation intervention to increase men's openness to women displaying dominance behaviors through a reduction in anxiety. In Study 1, we examine negotiations between MBA students to show that women's dominance behaviors are associated with men's heightened anxiety. In Study 2a, we experimentally offer evidence that self-affirmation moderates the effect of women's dominance on men's lower willingness to work with them. In Study 2b, we demonstrate that self-affirmation increases men's openness to women displaying dominance behaviors through a reduction in anxiety. In Study 3, we manipulate men's feelings of anxiety and show that self-affirmation decreases anxiety and increases men's behavioral collaboration with women displaying dominance behaviors. We discuss the potential implications of these findings for our understanding of gender bias in organizations, in particular for work cultures that induce stress and anxiety in men.

Acknowledgements

Data Availability Statement

Data for all studies are available at:
https://osf.io/yub25/?view_only=57fed87b8f734abe945331459e244417

Introduction

Extant work on gender in leadership has largely focused on women, by examining how they are perceived when they behave in ways that violate gender norms, by for example displaying dominance behaviors (e.g., Eagly & Karau, 2002; Rudman et al., 2012). A smaller but growing body of research has started to study men (Berdahl et al., 2018; Mazei et al., 2021). Men face distinctive gender dynamics in comparison to women, particularly in relation to motivations to sustain (as opposed to gain) relatively higher social status vis a vis the opposite sex (Gilmore, 1990; Vandello & Bosson, 2013): "If men lose social status, they lose respect, which reduces their perceived worth, and this outcome is at odds with their basic motive for social status." (Mazei et al., 2021, p. 114). Focusing on men would not only allow a more comprehensive understanding of the gender effects in leadership, but it would also shed light on potential interventions to level the playing field.

Men dominate the current gender system (Ridgeway & Correll, 2004) and, as such, they are motivated to justify the society's extant status hierarchy and to defend it (Jost, 2019; Jost & Hunyady, 2005) by displaying masculine behaviors (Vandello et al., 2008). These behaviors range from expressing preference for working with other men rather than with women (Bowles et al., 2007), being less supportive of gender fair policies (Kuchynka et al., 2018), and even to harassing women (Berdahl, 2007). Increasing the proportion or the number of women in organizations has been associated with men's reduced well-being (Konrad et al., 1992). As a result, men are particularly motivated to look for opportunities to demonstrate their masculinity.

Negotiations or competition against women are opportunities for men to assert and demonstrate their masculinity by being successful in them (Kray & Haselhuhn, 2012; Kray & Thompson, 2004). At the same time, if men are not successful in negotiations, especially with a female counterpart, they could incur losses to their sense of gender and social status (e.g., Kennedy & Kray, 2015; Mazei et al., 2021) and associated increased anxiety (Eisler & Skidmore, 1987; Mazei et al., 2021; Trombini et al., 2020; Vandello et al., 2008). We define anxiety as a negatively valanced emotion: "a state of distress and/or physiological arousal in reaction to stimuli including novel situations and the potential for undesirable outcomes" (Brooks & Schweitzer, 2011, p. 44).

Self-affirmation interventions have been shown to reduce stress and anxiety in situations in which individuals experience or anticipate that their self-worth and self-concept are threatened (e.g., Steele, 1988; Cohen & Sherman, 2014). Self-affirmation practices consist of reflecting on core personal values and on how to express them in contexts that could be threatening or anxiety-inducing (e.g., at work or in school). In this paper, we propose and test a self-affirmation intervention to increase men's openness to women engaging in dominance behaviors by decreasing their anxiety levels. Women's display of dominance behaviors (Williams & Tiedens, 2016) includes actions such as being assertive,

initiating negotiation during a job interview, or successfully competing in male-dominated environments (Rudman & Fairchild, 2004, Williams & Tiedens, 2016). We theorize that women displaying dominance behaviors increase men's anxiety, leading to men's reduced willingness to work or collaborate with women. Moreover, by reducing experienced anxiety, a self-affirmation intervention would increase men's collaboration with women displaying dominance behaviors. Through our research, we address recent research calls (e.g., Mazei et al., 2021) to focus on men to enrich our understanding of the gender effects in leadership advancement as well as interventions to mitigate them.

Gender-Role Stereotypes and Perceptions of Women's Dominance Behaviors

Men's reactance to women's dominance behaviors is often attributed to gender-role stereotypes (Eagly et al., 1992; Mazei et al., 2021). Gender-role stereotypes have both descriptive and prescriptive functions (Heilman, 2001): They define how men and women *are*, and how men and women are *expected to behave* according to their gender. The inconsistency between the *communal* characteristics (e.g., being nice, compassionate, other oriented) that are generally attributed to women and the *dominant* characteristics (e.g., being assertive, competitive, and self-oriented) that are generally attributed to leaders (Eagly & Karau, 2002; Heilman, 2001), can lead to women being penalized for engaging in dominant behaviors. Since dominant traits are more congruent with the male (vs. female) gender role, leadership tends to be associated with masculinity (Schein, 2001). This association not only affects how women are evaluated when they enact dominant behaviors, but also contributes to their lower attainment and maintenance of leadership positions within organizations (Eagly et al., 1992; Prentice & Carranza, 2002; Rudman et al., 2012).

Numerous studies have highlighted that female leaders are evaluated less favorably than their male counterparts when engaging in identical behaviors (e.g., Rudman, 1998; Rudman & Fairchild, 2004; Williams & Tiedens, 2016). For example, using a job-hiring paradigm, past research demonstrated that female candidates who violated the modesty prescription by self-promoting during an interview were evaluated as less likeable and less hireable than self-promoting male candidates (Rudman, 1998). These effects are especially pronounced in competitive situations, like negotiations. Specifically, Bowles et al. (2007) compared male and female job candidates negotiating pay during a videotaped job interview where actors were instructed to follow the exact same script either initiating or not initiating the negotiation. The videos were pre-tested, and although the actors were rated similarly on many characteristics such as age, socioeconomic status, and the emotions they displayed during the interview, participants' evaluations of the job candidates (e.g., on measures such as niceness, demandingness, and the extent to which they wanted to work with them) told a different story. Female job candidates were evaluated significantly more negatively when they did (as compared to did not) initiate negotiations, whereas act of initiating negotiations had relatively little influence on how men were evaluated. Specifically, evaluators were less willing to work with female candidates who negotiated (versus not) because they were perceived as less nice and more demanding (Bowles et al., 2007; Carli et al., 1995).

Importantly, in the aforementioned studies, both male and female participants penalized female candidates. However, there is evidence that men's and women's motivations for punishing women who violate gender norms and expectations may differ (Heilman, 2012). For women, punishing other women may stem from the desire to "keep other women down" due to social comparison processes or to avoid a painful upward comparison (Duguid, 2011; Ellemers et al., 2004; Parks-Stamm et al., 2008), particularly in situations in which they compete for limited resources (Derks et al., 2016). In contrast, men may have a vested interest in "keeping women down" to maintain their

superior status in the work setting and in society (Heilman, 2012). Our research focuses on the latter explanation by examining men's evaluation of women's dominance behaviors in an effort to offer interventions that specifically address threats to occupants of high status positions in organizations.

Hypothesized Effects of Women's Dominance Behaviors on Men

Because men tend to dominate the social hierarchy of work organizations (Acker, 2006; Ridgeway & Correll, 2004), women's display of dominance has the potential to challenge the status quo and thereby threaten men's place (Lowery et al., 2006; Ridgeway & Correll, 2004). It, therefore, becomes important to understand how men experience such dominance displays. Evidence that men feel threatened by and have negative reactions to initiatives that seek to reduce their privileged positions (Harrison et al., 2006; Joshi et al., 2015; Leslie et al., 2014; Sherf et al., 2017) suggests that men may behave in a reactionary, sexist or prejudicial manners that evoke negative emotions (Berdahl, 2007; Netchaeva et al., 2015). For example, there is evidence that men who perceive their gender and social status to be at stake in negotiations with a female counterpart experience increased feelings of anxiety (Kennedy & Kray, 2015; Mazei et al., 2021; Scheepers et al., 2009; Vandello et al., 2008). Further, men's feelings of anxiety can be magnified when women compete effectively in male-dominated domains (Vandello & Bosson, 2013). For instance, Vandello et al. (2008) presented participants with bogus feedback on a test that measured their knowledge about stereotypically masculine or feminine topics. When men were told they scored poorly for their gender (and therefore similarly to women), they reported higher feelings of anxiety than men told they scored well for their gender (and therefore better than women). Similarly, Netchaeva, Kouchaki, and Sheppard (2015) found that men felt more threatened by women (vs. men) in superior roles and, as a result, asserted themselves more forcefully when women held those roles (e.g., by responding with assertive negotiation counteroffers and keeping larger sums of bonus money in a zero-sum resource allocation task). Further, following gender hierarchy threat, there is evidence that men are less supportive of gender equitable policies (Kuchynka et al., 2018). Moreover, this anxiety can manifest itself physiologically, particularly in the context of status threats, such that men, relative to women, show higher blood pressure (Scheepers et al., 2009). Given the above, we hypothesize that:

H1. *Women's display of dominance behaviors is associated with heightened anxiety in men.*

As a reaction to anxiety posed by masculinity threats, men tend to display toughness (Fowler & Geers, 2017; Vandello et al., 2008) and to engage in risky behaviors (Ely & Meyerson, 2010), as a way to maintain their superior status. To this end, they also tend to be less supportive of gender-equitable policies (Kuchynka et al., 2018), and to express greater preference for working with other men rather than with women (Bowles et al., 2007). Moreover, anxiety research documents its negative effects on numerous outcomes, including interpersonal relationships and collaboration (Leach et al., 2013). For example, in negotiations, negative moods increase competition (Forgas, 1998; Pillutla & Murnighan, 1996), whereas positive moods increase preferences for cooperation (Baron et al., 1990; Forgas, 1998). Further, the experience of anxiety at work can decrease willingness to collaborate with others and reduce work engagement (e.g., Kahn, 1990; Siemsen et al., 2009). Specifically, Siemsen et al. (2009) demonstrated that a work environment characterized by low levels of threats and anxiety enhanced collaboration among co-workers in both manufacturing and service operations.
Thus, we hypothesize the following:

H2. Men's increased anxiety when experiencing women engaging in dominance displays is associated with (a) reduced willingness to work with them, and (b) reduced behavioral collaboration with them.

The Role of Self-Affirmation in Men's Responses to Women's Dominance Behaviors

Given the critical role self-affirmation plays in reducing anxiety in threatening contexts (Steele, 1998, 2011), we hypothesize that by affirming themselves, men's heightened feelings of anxiety may be reduced when interacting with women displaying dominance behaviors. Self-affirmation theory posits that individuals have the fundamental need to recognize the integrity of the self, perceiving themselves as good, moral, and virtuous people (Steele, 1988). When individuals' self-concept and self-worth are threatened, they experience distress and, as a result, they react defensively to situations (Steele, 1988; Cohen & Sherman, 2014). Self-affirmation entails reflecting on and writing about an alternative domain of self-worth (e.g., family and friends, sports, creativity), unrelated to the domain of the threat (e.g., work), which reduces distress in situations that threaten the sense of self (e.g., Sherman & Cohen, 2006).

Self-affirmation interventions have been applied to different disciplines, from health to education (e.g., Cohen & Sherman, 2014; Harris & Napper, 2005; Martens et al., 2006). In particular, self-affirmation has proven effective in decreasing stereotype threat experienced by members of minority groups. For instance, writing essays in which people describe a value that is important to them and a specific situation in which that value was crucial to them, helped close the racial gap in school performance for African American and Latino students (Cohen et al., 2009; Sherman & Cohen, 2002, 2006). Similarly, having MBA students complete a values assignment by selecting the core personal values that were important to them from a list of possible values (e.g., protecting the environment/issues of sustainability; helping people in need/participating in charitable organizations; relationships with family; relationships with friends, participating in my culture; learning about other cultures; health and fitness; and spirituality or religion. etc.) and writing about how they could express them in school helped close the gender gap in course performance for women in a business school environment where women are stereotyped to perform worse than their male peers (Kinias & Sim, 2016).

Self-affirmation interventions function by decreasing stress and anxiety (e.g., Creswell et al., 2005, 2013). For example, Creswell and colleagues (2013) showed that self-affirmation improved problem solving by decreasing stress levels participants were experiencing. Past work on self-affirmation has focused largely on how it can help members of stereotyped groups overcome the identity threat they experience when they are in situations in which they fear confirming the stereotypes attributed to their group. However, there is some evidence that self-affirmation could also help individuals who belong to dominant groups in situations in which they experience identity threats, for example at the prospect of losing their privileged position in society (Adams et al., 2006). Notably, Fowler and Geers (2017), demonstrated that men tend to respond with compensatory behaviors proving toughness (measured as the extent to which they were willing to receive electric shocks) when experiencing threats to their masculinity. The authors manipulated masculinity threat by giving participants bogus feedback on how they performed on a general knowledge inventory test. Specifically, participants in the masculinity threat conditions were told that their "score fell in the feminine knowledge range" and that they "have a lot of feminine knowledge". The authors further showed that a self-affirmation intervention was beneficial in reducing the expressions of toughness by decreasing the levels of threat men were experiencing.

Self-affirmation is thought to decrease individuals' stereotyped-based judgements in reaction to the threats they experience (Adams et al., 2006; Fein & Spencer, 1997; Phillips & Lowery, 2015; Kinias & Fennessy, 2016; Lowery et al., 2007; Unzueta & Lowery, 2008; Sherman & Kim, 2005). An early demonstration of this effect (Fein & Spencer, 1997) showed that people were more likely to stereotype when they felt threatened, and that self-affirmation decreased the propensity to make stereotype-based judgments, by decreasing threat perception. Specifically, participants randomly assigned to receive negative feedback on an intelligence task (i.e., threat condition) made more stereotypic evaluations of a gay male than those randomly assigned to receive neutral feedback (i.e., control condition). Further, participants were less likely to stereotype a target of evaluation if they had undergone a self-affirmation procedure. These findings extend to the domain of demographic differences as there is evidence that self-affirmation can help White Americans acknowledge the presence of racism against Black and Latinos in the United States (Adams et al., 2006). Given these findings on the benefits of self-affirmation as it relates to stereotyping in domains including race and sexual orientation, we hypothesize it may play a role in attenuating the anxiety associated with gender threats. Specifically, we hypothesize:

H3. *Men who engage in a self-affirmation intervention will be more likely to collaborate with women displaying dominance behaviors than those experiencing no such intervention.*

H4. *Reduced anxiety will explain (mediate) the effect of self-affirmation on men's increased collaboration with women displaying dominance behaviors.*

Overview of the Studies

We test our proposed model (see Figure 1) in four studies[1]. In Study 1, we explore the relationship between women's dominance behaviors and men's feelings of anxiety in negotiations between male and female Master of Business Administration (MBA) students. In Study 2a, we examine the effects of a self-affirmation intervention on men's willingness to work with women exhibiting dominance behaviors. Using a sample of online workers, Study 2b aims to replicate, integrate, and extend the effects found in Studies 1 and 2a, as well as test a moderated mediation model in which self-affirmation mitigates the effect of men's anxiety on their willingness to work with dominant women. In Study 3, we experimentally manipulate men's feelings of anxiety to causally test the effects found in Studies 2a and 2b using a behavioral dependent variable.

Study 1

The goal of Study 1 was to conduct a preliminary test to see whether women's dominance behaviors are positively associated with men's heightened feelings of anxiety. We tested Hypothesis 1 with data from MBA students at a large, private university, in the Northeast United States.
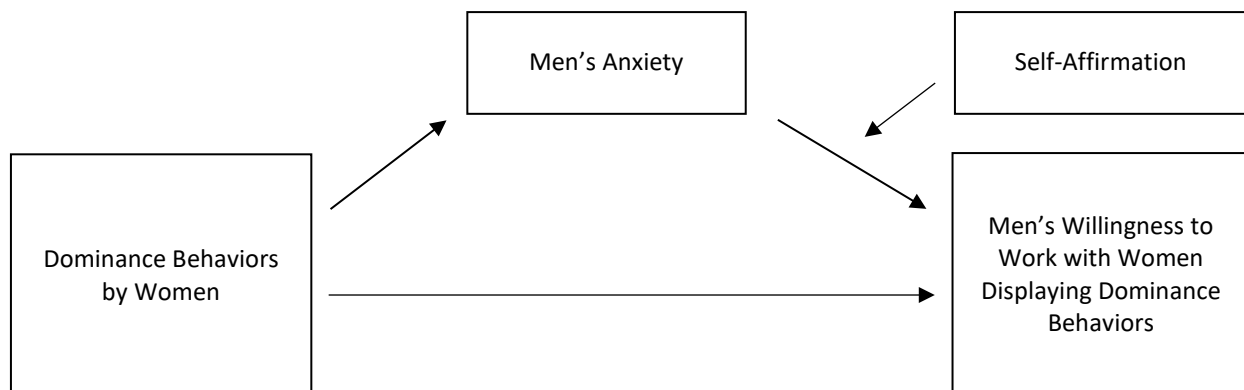
Participants

Seventy-six students (38 women; M_{age} = 27.64, *SD* = 1.79, range = 25-34) were recruited from the MBA program of a large private East Coast university. The racial composition of the sample was

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[1] Data for all studies are available at: https://osf.io/yub25/?view_only=57fed87b8f734abe945331459e244417

50% Caucasian, 7% Black, 30% Asian, 9% Hispanic, 4% other. The 38 female participants and 38 male participants composed 38 mixed-gender negotiating dyads.

Figure 1

Proposed Model: Men's reaction to women's dominance behaviors

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                    ┌─────────────────┐              ┌─────────────────┐
                    │  Men's Anxiety  │              │ Self-Affirmation│
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┌─────────────────┐                        ┌──────────────────────┐
│                 │                        │  Men's Willingness to │
│   Dominance     │───────────────────────→│  Work with Women      │
│   Behaviors     │                        │  Displaying Dominance │
│   by Women      │                        │  Behaviors            │
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Procedure

Prior to the session, participants completed an online survey where they were asked demographic information to facilitate dyad pairings and to assign participants to one of three study sessions based on their availability. Two study sessions were held on the same day and the third 10 days later to accommodate available participants. Upon arrival at the study session, participants completed informed consent forms and were given an overview of the session[2]. Each participant then received a set of confidential instructions which described their role in the negotiation exercise, the relevant issues to be negotiated, and point totals reflecting the priority they should attach to each issue. Participants were then made aware of who their negotiation partner would be, were given 10 minutes to read through their materials, after which they completed a questionnaire assessing their perceptions of the upcoming negotiation. Dyads were then paired and given 30 minutes to negotiate. The negotiation concluded when both parties reached a mutual agreement or when the full 30 minutes had elapsed. Immediately following the negotiation, participants completed a post-negotiation questionnaire assessing their negotiation experience and their perceptions of their counterpart. Participants were then thanked, debriefed, and paid $100 each.

Negotiation Task

The negotiation task was about a potential acquisition. Participants were assigned to either the role of a Vice President of Business Development for one of CPC International's Consumer Food Divisions, or the President and majority stakeholder of a closely held private food company that was the target of the acquisition. Negotiators had to seek agreement on four issues: financial terms, non-compete periods, family employees, and contingent liability. All participants were instructed that their

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[2] During this period, we also collected saliva samples, later assayed for hormones, from all participants. We do not report on these hormones as they are not the theoretical focus of the current research.

goal was to maximize their own personal gain – that is, to reach an agreement with the other person on all four issues that was best for them. In addition, participants were prohibited from showing their payoff table to the other person.

Measures

We measured self-reported anxiety after the negotiation with an average of participants' responses to two items (scared, afraid; α = 0.81) that used a 5-point scale (1 = not at all, 5 = a great deal; Watson & Clark, 1994) (*M* = 1.16 , *SD* = 0.39). We measured perception of counterpart dominance with the following item "How would you describe your partner during the negotiation?" that used a 7-point scale (1 = submissive, 7 = dominant) (*M* = 4.41, *SD* = 1.06).

Results and Discussion

Supporting Hypothesis 1, we found that women's displays of dominance behaviors were associated with men's higher feelings of anxiety (*r* = .349, *p* = .032). Conversely, men's display of dominance behaviors was not associated with women's feelings of anxiety (*r* = .241, *p* = .145). We acknowledge the potential limitations of a 1-item measure of dominance and the 2-item measure of anxiety. Studies 2-4 used alternative measures of these constructs to corroborate our hypotheses. Since Study 1 provides correlational evidence for our hypothesized effect, in Studies 2 and 3 we used an experimental design to causally test Hypothesis 1 and to examine the moderating role of self-affirmation in our hypothesized effects (Hypothesis 3).

Study 2a (Pilot)

In Study 2a, we have two goals. First, to replicate prior research showing that men prefer to work with dominant men relative to dominant women. Second, to *preliminary* examine whether self-affirmation mitigates that effect.

Participants

We recruited 145 participants via Prolific Academic to complete an online survey. After completing data collection, we conducted a sensitivity analysis with G*Power showing that our sample size was sufficient to detect effect sizes of η^2 = .052 or larger with 80% power. Prolific Academic is a crowdsourcing platform with a participant pool composed of individuals from the UK (51%), the US (28%), and other (mainly) European countries (21%). Participants in our study were 59% male (n = 86) and had a mean age of 30.1 years (*SD* = 9.7, range = 18-72). Seventy-two percent self-identified as White, 10% as Asian, 5% as Hispanic, 3% as African, 4% as Mixed, and 6% as Other. Eighty-one percent were currently employed, 54% had management experience, and 34% had hiring experience.

Procedure

In the consent form, participants read that they would participate in two separate studies. The first study, described as a "Study of Values," contained a self-affirmation manipulation following procedures validated in prior research (Fein & Spencer, 1997; McQueen & Klein, 2006; Sherman et al., 2000). We presented participants with a list of 11 values, such as relationships with friends and family, creativity, and sense of humor, and asked them to rank the values in order of their personal importance. In the affirmation condition, we asked participants to write about why their top ranked (#1) value was important to them. In the control condition, we asked participants to write about why their lowest ranked (#11) value might be important to someone else.

The second study, described as a "Job Interview Study," was an adapted version of an online survey used by Bowles and Babcock (2013) to measure backlash against female negotiators. The background information asked participants to imagine they were working at a large corporation in the automotive industry and explained that their task was to evaluate an internal candidate for a job placement in their department based on a videotaped job interview. According to the information provided to participants, the candidate had just completed an internal management training program and had graduated from a "top school," performed well in the training program, and was entering their first management position.

After reading the background information, each participant watched the purported job interview tape, a short video of either a female or a male candidate who attempted to negotiate for a higher salary and an end-of-the-year bonus. Specifically, the candidate said the following at the end of the video:

> "I do have some questions with regard to the salary and benefits package. It wasn't clear to me whether this salary offer represents the top of the pay range. I understand that there's a range in terms of how much managers are paid in their first placement. I think I should be paid at the top of that range. And I would also like to be eligible for an end-of-year bonus."

We selected this stimulus because numerous studies have documented that self-advocating for higher pay makes women appear dominant (e.g., insufficiently nice, too demanding) and elicits backlash against them (Amanatullah & Morris, 2010; Bowles et al., 2007; Duguid & Thomas-Hunt, 2015). The candidates were professional actors trained to enact the script as similarly as possible. Pretesting indicated no significant differences in perceived age, socio-economic status, physical attractiveness, or facial expressions of the candidates (Bowles & Babcock, 2013). The survey completed by participants was paced so that it would not progress until the end of the video, after which participants indicated their willingness to work with the candidate.

Measures

We measured willingness to work with the candidate with an average of participants' responses to three items (how beneficial it would be for them to have this person on their team, how much they would enjoy having this person working on their team, and how much they would want this person on their team) that used a 7-point scale (1 = not at all, 7 = extremely) (α = 0.91) (adapted from Bowles et al., 2007).

Results and Discussion

We conducted an ANOVA on willingness to work with the candidate by evaluator gender, candidate gender and self-affirmation condition. Consistent with prior research, we found, with marginal significance, that in the control condition, men were more likely to work with the dominant male candidate (M = 4.25, SD = 1.40) than with the dominant female one (M = 3.40, SD = 1.24), $F(1,137)$ = 3.876, p = .051, η_p^2 = .03. This effect was mitigated when men self-affirmed. In other words, in the self-affirmation condition, male evaluators were equally likely to work with the male (M = 4.20, SD = 1.40) or the female candidate (M = 4.76, SD = 1.34), $F(1,137)$ = 2.02, p = .157, η_p^2 = .02, supporting Hypothesis 3 (see Figure 2).

Although the focus of the current paper is on male behavior, out of curiosity we examined whether similar effects were observed among female evaluators. In the control condition, female evaluators did not have any preference to work with the male (M = 4.09, SD = 1.40) or the female candidate (M = 4.31, SD = 1.41), $F(1,137)$ = 0.206, p = .651, η_p^2 = .00. When self-affirmed, female evaluators were still equally likely to work with the male (M = 4.92, SD = 1.14) or the female candidate (M = 4.40, SD = 1.32), $F(1,137)$ = 1.007, p = .317, η_p^2 = .01.

Overall, we observed a main effect of self-affirmation condition ($F[1,137] = 6.01$, $p = .015$, $\eta_p^2 = .04$), such that evaluators who had been self- affirmed ($M = 4.53$, $SD = 1.33$) were more willing to work with the candidates than evaluators in the control condition ($M = 3.98$, $SD = 1.38$). This main effect was qualified by a significant three-way interaction, $F(1,137) = 5.49$, $p = .021$, $\eta_p^2 = .04$. No other effects (nor interactions) were significant (all Fs < 1.524, all ps ≥ .22, all $\eta_p^2 < .01$).

In Study 2a we replicated prior research showing that men prefer to work with dominant men relative to dominant women, and we found preliminary evidence for self-affirmation to mitigate that effect. Study 2b will test this effect with a bigger sample, as well it will examine its mechanism.

Figure 2

Study 2a: Means of willingness to work with candidate by evaluator gender, candidate gender, and self-affirmation condition. Error bars show standard errors.
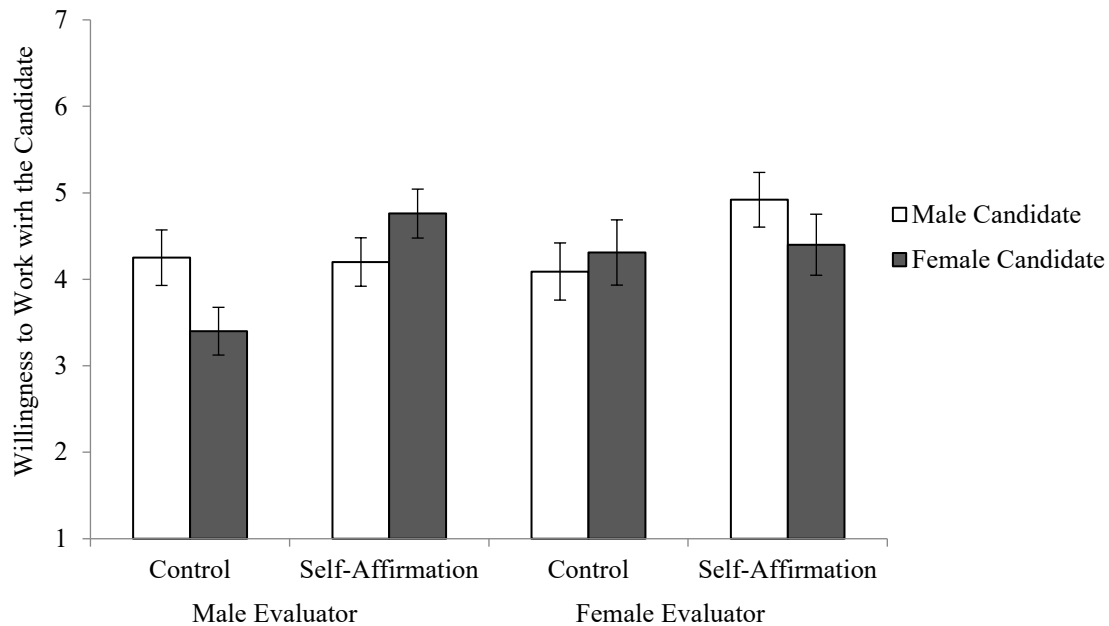
Study 2b

In Study 2b, we aimed to replicate, integrate, and extend the results of Studies 1 and 2a by testing the moderated mediation model whereby self-affirmation increases men's willingness to work with women displaying dominance behaviors through a reduction in anxiety. We tested Hypotheses 1-4.

Participants

We recruited 280 adults to complete an online study via Prolific Academic. As in Study 2a, we conducted a sensitivity analysis with G*Power. The analysis showed that, assuming 80% power, our sample size was sufficient to detect effect sizes of $\eta^2 = .028$ or larger. The sample was 59% male (n = 164), their mean age was 28.3 years ($SD = 8.2$, range = 19-67). Seventy-eight percent self-identified as

White, 9% as Asian, 6% as Hispanic, 2% as Middle-Eastern, 5% as Mixed. Eighty-nine percent were currently employed, 38% percent had management experience, and 27% had hiring experience.

Procedure

The procedure was identical to Study 2a, with the exception that we included additional measures of dominance behaviors and anxiety. After watching the video, participants rated the extent to which they perceived the candidate to be dominant, their emotional reaction (i.e., sense of anxiety), and then their willingness to work with him or her.

Measures

We measured anxiety with the average of four items (nervous, anxious, worried, and apprehensive; α = 0.87) used in previous research on anxiety (adapted from Brooks & Schweitzer, 2011). We measured dominance behaviors with eight items (hostile, arrogant, boastful, greedy, dictatorial, looks out only for self, egotistical, and cynical; α = 0.88) from the Personality Attributes Questionnaire (PAQ; Spence et al., 1979). Finally, participants indicated their willingness to work with the candidate (α = 0.92) using the same measure as in Study 2a.

Results

In further support for Hypothesis 3, we found that, in the control condition, men were more willing to work with the dominant male candidate (M = 4.51, SD = 1.13) than with the dominant female candidate (M = 3.64, SD = 1.27), $F(1,272)$ = 11.35, p = .001, η_p^2 = .04., replicating prior research. This effect was mitigated when men are affirmed; in the self-affirmation condition, male evaluators were equally likely to work with the male (M = 4.43, SD = 1.20) or the female candidate (M = 4.47, SD = 1.43), $F(1,272)$ = 0.23, p = .879, η_p^2 = .00. Study 2b provided further evidence for the effect of self-affirmation on men's willingness to work with dominant women (See Figure 3).
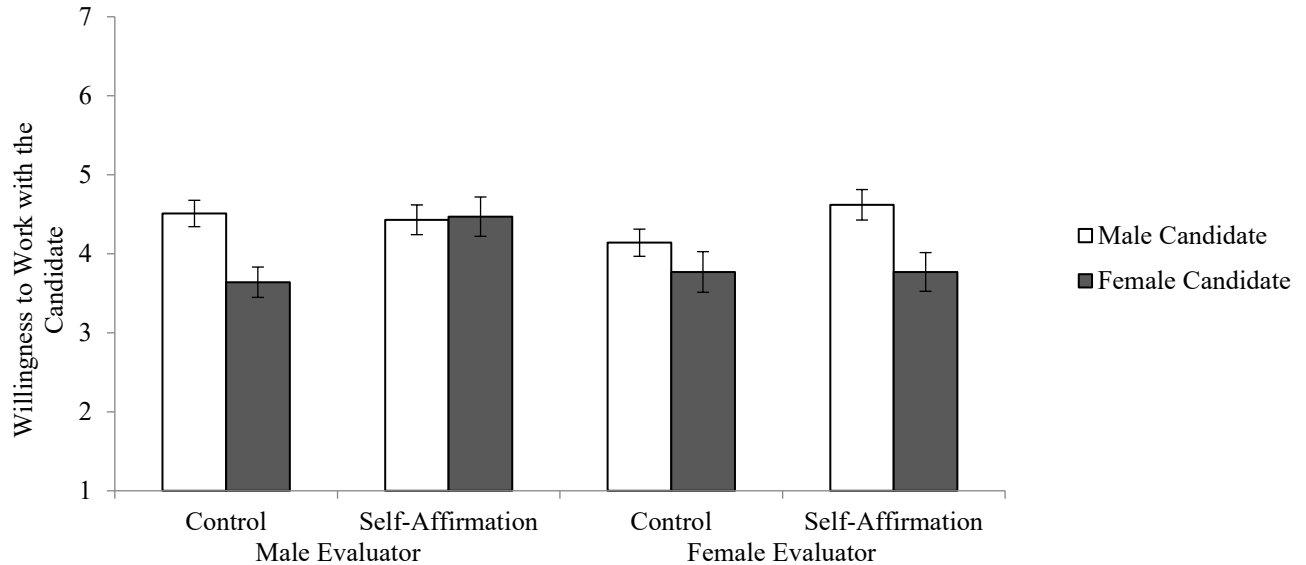
Overall, we observed a main effect of candidate gender ($F[1,272]$ = 11.83, p = .001, η_p^2 = .04), indicating that evaluators were less willing to work with a female candidate (M = 3.90, SD = 1.38) than with a male candidate (M = 4.44, SD = 1.10). There was also a main effect for self-affirmation ($F[1,272]$ = 4.29, p = .039, η_p^2 = .02), indicating that evaluators who were self-affirmed (M = 4.33, SD = 1.29) were more willing to work with the candidate than evaluators in the control condition (M = 4.03, SD = 1.23). These effects were qualified by a significant three-way interaction of Evaluator Gender × Candidate Gender × Self- Affirmation, $F(1,272)$ = 5.47, p = .020, η_p^2 = .02.

Mediation Analyses. We used a moderated mediation model to test our prediction summarized in Figure 1. Specifically, we tested whether women's dominance behaviors was associated with higher anxiety for men and in turn reduced men's willingness to work with women, and that self-affirmation moderated the effect of men's anxiety on their willingness to work with dominant women. Only men evaluating the female candidate were included in the analyses. Using the PROCESS SPSS macro (Model 14) to test for moderated mediation (following Hayes, 2017), we calculated the 95% bootstrap confidence intervals based on 10,000 bootstrap samples. The predictor variable was dominance behaviors, the mediator variable was anxiety, the dependent variable was willingness to work and the moderator was self-affirmation. Table 1 reports the regression output.

Our analyses supported the predicted mediation model. As expected, women's dominance had a significant effect on men's anxiety (b = 0.48, SE = 0.05, p < .001), and the interaction effect of anxiety and self-affirmation predicting willingness to work was negative and significant (b = -0.45, SE = 0.17, p = .011). The index of moderated mediation (b = -0.22, SE = 0.84) was significantly different from zero (95% CI = [-0.40, -0.70]), suggesting that self-affirmation is a significant moderator of our model.

Figure 3
Study 2b: Means of willingness to work with candidate by evaluator gender, candidate gender, and self-affirmation condition. Error bars show standard errors.

Ancillary Analysis. Again, even though the focus of this paper is on male behavior, out of curiosity we examined female evaluators' ratings to see if the effects seen in males generalized to females. In the control condition, female evaluators did not show a preference for working with the male (M = 4.14, SD = 0.91) or female candidate (M = 3.77, SD = 1.38), $F(1,272)$ = 1.32, p = .252, η_p^2 = .01, consistent with prior research and our findings in Study 2a. Interestingly, and counter to our findings in Study 2a, when self-affirmed, female evaluators were *more* likely to work with the male (M = 4.62, SD = 1.04) than with the female candidate (M = 3.77, SD = 1.34), $F(1,272)$ = 7.15, p = .008, η_p^2 = .03).

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Table 1

Study 2b: Moderated Mediation Results (X=Dominance, M=Anxiety, W=Self-Affirmation; Y=Willingness to Work)

	Anxiety		Willingness to Work (WTW)
Dominance	.481***(.049)		-.669***(.077)
Anxiety			.020 (.153)
Self-Affirmation (SA)			1.048 (.450)
Anxiety*SA			-.454*(.173)
R^2	.57***		.76***
Direct Effect (Dominance → WTW)	-.669***(.077)	95% CI [-822; .516]	
Indirect Effect	-.218 (.084)	95% CI [-.401; -.073]	

Note. Coefficients are unstandardized, and standard errors are in parentheses.
*$p < .05$; **$p < .01$; ***$p < .001$

Discussion

Thus far, we found evidence in support of our four key hypotheses, showing that dominance displays in women are associated with heightened anxiety for men and with a reduced willingness of men to work with women viewed as dominant. Moreover, self-affirmation moderated this effect. While we observed preliminary evidence that these effects are not seen in women evaluators, this evidence was inconsistent across Studies 2a and 2b. Given that the focus of the paper is on men, we did not explore this difference further, but encourage future work examining this topic.

Importantly, in Studies 2a and 2b, our dependent variable was attitudinal, leaving open the question of men's actual behaviors when interacting with dominant women, which we examine in Study 3. Further, in Study 3 we provide additional evidence for the model's *causal* claims, by manipulating our proposed mediator: anxiety.

Study 3

In Study 3, we test Hypothesis 2b, Hypothesis 3 and Hypothesis 4. Participants had an opportunity to collaborate with a dominant woman (a woman excelling in a masculine environment; Rudman and Fairchild, 2004; Williams and Tiedens, 2016), and since our effects for men were robust in all three studies leading up to Study 3, we recruited only male participants for parsimony. Borrowing from Rudman and Fairchild (2004), we created a paradigm in which men had the opportunity to aid a dominant woman, operationalized as the *sole* female contender (against four men), in the final round of an online competition by providing clues that would either hinder or help her in solving anagram puzzles (Rudman et al., 2012). We operationalized dominance behavior as a woman excelling in a

masculine contest as Rudman and Fairchild (2004). Specifically, the authors found that women excelling in a masculine contest were more likely to be sabotaged (that is less likely to be helped) by participants.

One of our main goals in this study was to manipulate anxiety. Given that past literature has demonstrated how hard it is to induce anxiety in a laboratory setting, and even more so in an online setting, we relied on past work suggesting that the level of competition of a context is an important antecedent of anxiety (Glick et al., 2018). We then designed stimuli that varied the competition vs. cooperation level in the environment to indirectly manipulate the level of anxiety experienced. In the high-anxiety condition, we adapted items from a scale of Organizational Culture as a Masculinity Contest (OCMC; Glick et al., 2018) to prime masculine competitive work norms that have been linked to feelings of anxiety (Glick et al., 2018). These work norms include, for example, the perceived need to display confidence and high physical stamina. In the low-anxiety condition, we adapted items from Edmondson's (1999) scale of psychological safety, which includes norms, such as, willingness to collaborate and help others.

In order to ensure generalizability, we used a different type of self-affirmation manipulation in which participants are asked to reflect on their personal values and how they could express them in their organization (adapted from Cable et al., 2013). Past work has shown that the self-affirmation manipulation we used in Studies 2a and 2b, as well as the one we used in the current study have similar effects on eudemonic wellbeing and openness to potentially threatening intergroup information (Kinias & Fennessy, 2016). We predicted that increased anxiety would decrease men's collaborative work with the female contestant and that self-affirmation would reduce men's anxiety and thus increase their propensity to work collaboratively with her.

Pilot Study

Given past studies have shown that competition within an environment is a source of anxiety (Edwards et al., 2006, Gonzalez-Bono et al., 1999), we recruited 130 men via Prolific Academic to pre-test our anxiety manipulation. Participants read a passage about the types of employees companies are trying to recruit in "today's fast-changing markets." Participants randomly assigned to the high anxiety condition read the following:

> "In competitive, fast-changing markets, there are companies looking to recruit competitive, hard-charging employees. They are looking to recruit people who display confidence, who have the physical stamina for long demanding hours of work, and who can handle stress without becoming emotional. Some executives believe that these qualities predict people's success."

Participants were then asked to rate their fit with this particular type of work environment on a 7-point scale (1 = strongly disagree, 7 = strongly agree). Sample items included "I am physically strong and healthy," "I am confident," and "Nothing wears me down."

Participants randomly assigned to the low anxiety condition read the following:

> "In today's fast-changing markets, there are companies looking to recruit cooperative employees who are able to work in teams to get the job done. They are looking to recruit people who are able and willing to collaborate, discuss problems and tough issues, and help their coworkers. Some executives believe that these qualities predict people's success."

As in the high anxiety condition, participants rated their fit with this type of work environment. Sample items included "I value others' perspectives," "I like sharing my ideas," and "I like helping my peers with their work."

To test whether the manipulation had its intended effect of producing anxiety, we next asked participants to complete a seven-item word-completion task used in prior research (Vandello et al.,

2008). Each letter string could be completed to form a word related to anxiety. For example, the string "STRE __ __" could be completed as "STRE$\underline{SS}$" or as "STRE$\underline{ET}$." The seven anxiety-related words were stress, threat, shame, loser, bother, weak, and upset. One hundred and twenty-nine men completed the study. As intended, men in the high anxiety condition completed the letter strings with more stress-related words than men in the low-anxiety condition, $t(127) = 2.58$, $p = .011$, $d = .46$. These results suggest that the stimulus was a reliable (indirect) manipulation of anxiety.

Participants

We recruited 180 men to complete an online study via Prolific Academic. We conducted a sensitivity analysis with G*Power. The analysis showed that our sample size was sufficient to detect effect sizes of $\eta^2 = .042$ or larger with 80% power. The mean age was 31.4 (SD = 11.1, range = 19-65). Eighty-six percent of the participants values identified as White, 7% as Asian, 4% as Hispanic, 2% as Middle-Eastern, 1% as Mixed.

Procedure

In the consent form, participants read that they would participate in multiple studies. On the first page, we asked participants (all men) to indicate their age and gender by selecting either a female or a male icon. All participants selected a male icon.

The next part of the survey was described as a "Work Environment Study" and replicated the anxiety manipulation pretested above. Following the anxiety manipulation, we randomly assigned participants to a self-affirmation or control condition. In the self-affirmation condition, the men were asked the following four questions: (1) What three words best describe you as an individual? (2) What is unique about you that leads to your happiest times and best performance at work? (3) Can you please describe a time (perhaps on a job, perhaps at home) when you were acting the way you were "born to act?" and (4) How can you repeat that behavior on the job? (adapted from Cable et al., 2013). Adapting from similar studies, we asked men in the control condition to write about their last trip to the grocery store.

Following the self-affirmation manipulation (or control), participants entered the "Verbal Study" in which they had the opportunity to help a contestant in an online gaming competition. The general instructions read as follows:

> "We previously randomly selected 50 participants to compete in a gaming tournament. In each round participants competed in online games. Only the top players continued to the next round. The following five players advanced to the third and final round: MARK, JEFF, FELIPE, ERIKA, and JOHN. You will be randomly assigned to help one of those five finalists on their final round. In the final round they will be solving anagrams. Your job is to select clues you want him/her to receive."

To clarify that only one woman made the final round, participants also saw four male icons (MARK, JEFF, FELIPE, and JOHN) and one female icon (ERIKA). These icons were of the same type they assigned to themselves at the beginning of the study.

Participants then received ten anagrams and possible clues for their solutions (based on Rudman et al., 2012). We told participants that the contestant they would be helping was "ERIKA" (i.e., the only woman in the final round). For each of the ten anagram puzzles, they could choose no more than one clue from a list of three possible clues or they could choose to provide no clue at all.

Measures

We measured behavioral collaboration based on how helpful the clues selected for ERIKA would be for solving the 10 anagrams. We presented the clues in random order. Following Rudman

et al. (2012), we scored the clues on a scale of 1 to 4 (1 = no clue provided, 4 = most helpful). A sample anagram was "CPESNRAA" (answer = "PANCREAS"). An example of an unhelpful clue (rated 2) would be "It starts with the letter 'P.'" An example of a more helpful clue (rated 3) would be "It's an organ in your body." The most helpful clue (rated 4) would be "It's the organ in your body that starts with 'P.'" The collaboration measure was the sum of the scores for whatever clues they provided (possible range 10–40).

Results

All recruited participants but one completed the study. We report results for the 179 participants who completed the study. Results of the ANOVA on collaboration by anxiety condition and self-affirmation condition revealed a significant interaction of Anxiety × Self-affirmation, $F(1, 175)$ = 4.08, p = .045, η_p^2 = .02. Figure 4 depicts the pattern of effects. In the control condition, men did collaborate with women less in the high anxiety condition (M = 32.49, SD = 4.56) compared to the low-anxiety condition (M = 35.07, SD = 5.13), $F(1, 175)$ = 6.90, p = .009, η_p^2 = .04. This effect was mitigated when men were affirmed. Specifically, in the self-affirmation condition, anxiety had no significant effect on the propensity to collaborate with women (high anxiety condition: M = 34.92, SD = 4.73; low anxiety condition: M = 34.59, SD = 4.75, $F(1, 175)$ = 0.10, p = .754, η_p^2 = .00), providing further support for reduction in anxiety as a mechanism through with self-affirmation increases men's propensity to work collaboratively with dominant women.

Discussion

The results of Study 3 replicated the pattern of effects observed in Studies 2a and 2b and extend them by manipulating anxiety directly and employing a behavioral indicator of men's propensity to work collaboratively with women. Under heightened male anxiety, men were less likely to collaborate with the sole woman finalist in an online contest. However, as before, self-affirmation mitigated this effect.

Figure 4
Study 3: Average levels of men's collaboration with female contestant by anxiety and self-affirmation conditions. Error bars show standard errors.
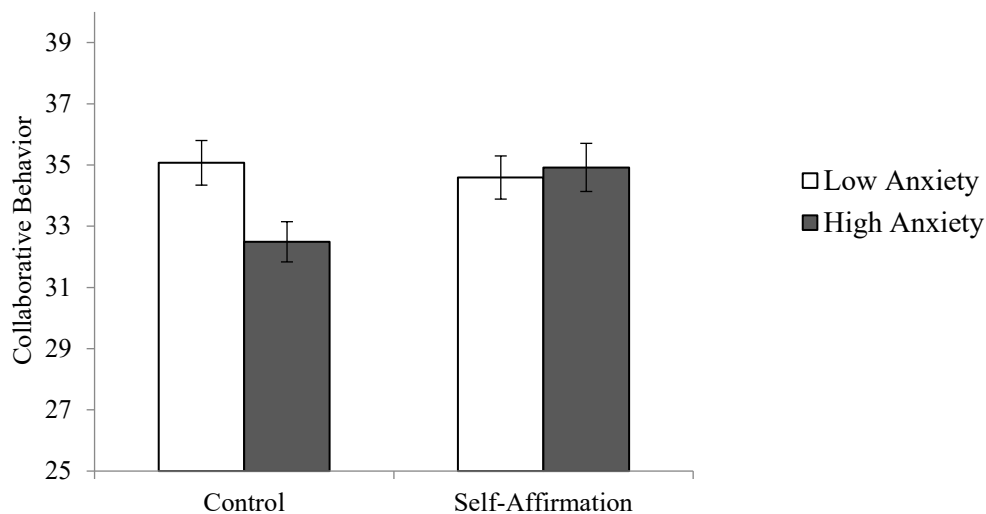
General Discussion and Conclusion

The current research proposes self-affirmation as a potential intervention to mitigate gender bias. Across four studies we showed that women's displays of dominance behaviors are associated with men's heightened feelings of anxiety and a decreased willingness to work with women. Moreover, we showed that self-affirmation moderated this effect by reducing men's feelings of anxiety and, thereby, increasing their attitudinal and behavioral propensity to work collaboratively with women. Our work contributes to the literature on gender in leadership by highlighting the potential for men's anxiety in response to dominant women to heighten gender bias favoring men. Our results suggest that anxiety undermines men's willingness to support women displaying dominance behaviors. Using multiple forms of self-affirmation, we found that reflecting on one's most important values reduces men's anxiety and increases willingness to engage collaboratively with female co-workers.

Theoretical Contribution

The current research has relevant theoretical implications for the study of gender bias and work discrimination more broadly. Traditionally, self-affirmation interventions have focused on decreasing the threat experienced by *targets* of stereotypes. Few studies have demonstrated the effect of self-affirmation on the *perpetrators* of discrimination who experience identity threat (Adams et al., 2006; Fein & Spencer, 1997; Unzueta & Lowery, 2008), although this prior research had not focused on *gender* bias specifically. Our study provides further evidence that self-affirmation may help reduce the propensity for stereotyped-based judgements, specifically in relation to gender, and mitigate its potentially damaging effects.

This set of studies addresses research calls inviting greater focus on men for a more comprehensive understanding of gender effects in leadership, as well as to shed light on potential interventions to level the playing field (e.g., Mazei et al., 2021). Men face distinctive gender dynamics in comparison to women, particularly driven by their motivation to sustain (vs. gain) higher social status (Ridgeway & Correll, 2004; Jost, 2019; Jost & Hunyady, 2005). Recent research shows that men perceive negotiations and competition as activities that could threaten their masculinity and social status (Mazei et al., 2021; Vandello & Bosson, 2013). In our research, we theorize and find that men experience anxiety when interacting with women displaying dominance behaviors (i.e., women initiating negotiation or women excelling in a masculine contest) which leads to a reduced willingness to work with them. Moreover, we contribute to this line of research by finding support for a self-affirmation intervention to decrease men's anxiety in response to women's displays of dominance behaviors.

Limitations and Future Directions

Prior research has highlighted that gender effects in leadership are context-specific (e.g., Kennedy & Kray, 2015; Mazei et al., 2015), thus it is important to note that in this paper we focused on documented situations in which gender bias favoring men is more likely to emerge. Future research should examine the generalizability of these effects in other domains and with other types of dominance behaviors, such as self-promoting during a job interview or a performance review meeting. Further, our work leaves open some important questions for future research. We find that self-affirmation reduces gender bias because it reduces men's anxiety, but our research does not explain why this occurs. Prior research on self-affirmation has not established a unique mechanism

underlying its effects. Some studies have found that affirmation operates through increasing positive mood (Koole et al., 1999; Raghunathan & Trope, 2002), or by decreasing self-doubt (Kinias & Sim, 2016). Some other studies found that self-affirmation increases self-esteem (Fein & Spencer, 1997), while others found no such effects (Schmeichel & Martens, 2005). More research is needed to illuminate the mediating mechanisms through which self-affirmation affects individuals' attitudes and behavior (Cohen & Sherman, 2014).

Another open question is the extent to which self-affirmation could have lasting effects in mitigating gender bias in organizations. Field research suggests that self-affirmation can have lasting effects for the individuals who are the targets of stereotypes (Cohen et al., 2009). For instance, Cohen at al. (2009) demonstrated that periodic self-affirmation (i.e., 3-5 times per year) helped minority students' manage stereotype threat for as long as two years. In two field experiments, Kinias and Sim (2016) demonstrated that a one-time self-affirmation during the orientation week ameliorated stereotype-consistent gender performance gaps in course grades among MBA students at an international business school. Similarly, Cable et al. (2013) implemented a one-time self-affirmation intervention during a work orientation program and found that having newcomers reflect on their personal values and how they could express them at work had positive effects on employee retention six months after the intervention.

To enhance the practical relevance of this work (Reed & Aspinwall, 1998), future research should move to the field and consider implementing self-affirmation practices in organizations when hiring, promotions, and performance evaluations decisions have to be made. As an example, during certain committee meetings where hiring, promotion, or performance review-related decision are made, the committee could ask their members to share how they bring their personal values to their work.

Conclusion

Taken together, our findings suggest that managers should be mindful of how cultural norms in their organizations, such as whether their culture functions as a masculinity contest, might heighten the potential for discriminatory attitudes. Additionally, work contexts that heighten employee anxiety may lead to gender discriminatory behavior. However, by using self-affirmation as a brief and low-cost intervention, it may be possible to improve men's collaboration with women exhibiting dominance behaviors, and more broadly to improve diversity, equity, and inclusion initiatives by focusing on targeting men's anxiety.

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