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MONOGRAPH

Reconciling Female Agentic Advantage and Disadvantage
With the CADDIS Measure of AgencyAnyi Ma¹, Ashleigh Shelby Rosette², and Christy Zhou Koval³¹ Department of Management, Freeman School of Business, Tulane University² Department of Management and Organizations, Fuqua School of Business, Duke University³ Department of Management, Broad College of Business, Michigan State University

Contradictory findings about whether agentic women are penalized or rewarded persist in gender and leadership research. To account for these divergent effects, we distinguish between agentic traits that people believe female leaders ought to possess (i.e., agency prescriptions) and ought not possess (i.e., agency proscriptions). We draw on expectancy violation theory to suggest that an agentic advantage is elicited when women are perceived to violate agency prescriptions (e.g., competence), whereas an agentic disadvantage is elicited when they are perceived to violate agency proscriptions (e.g., dominance). We first developed and validated a new, six-factor measure of agency in Studies 1 and 2, CADDIS (i.e., Competent agency, Ambitious agency, Dominant agency, Diligent agency, Independent agency, and Self-assured agency). We theorized that these agency factors represented distinct agency prescriptions and proscriptions for men and women. In Studies 3–5, we found that this six-factor conceptualization of agency not only reconciles existing tensions within the gender and leadership literature, but also leads to a different understanding of past conclusions—an agentic advantage occurs when women are perceived to possess competent agency, diligent agency, and independent agency, and an agentic disadvantage occurs when women are perceived to possess dominant agency.

Keywords: agency, gender, leadership, measure development

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In his foundational work, Bakan (1966) posits that *agency* is represented as mastering one's environment and individuating the self. In the decades since Bakan introduced this view, the concept of agency has become fundamental to gender and leadership research, particularly as it relates to biased evaluations of agentic women. Agentic qualities, like assertiveness, independence, and ambition, are perceived as requirements for leadership success and are also assumed to be stereotypically less desirable in women than in men (e.g., Duehr & Bono, 2006; Eagly et al., 2020; Schein, 1973). Therefore, a robust body of work finds that women leaders are often evaluated less favorably (i.e., encounter social and economic

backlash) when they display agentic behaviors that are needed for leadership as these demonstrations conflict with gender role prescriptions, or expectations about how they should behave according to the characteristics ascribed to their gender (Eagly & Karau, 2002; Okimoto & Brescoll, 2010; Rosette et al., 2016; Rudman, 1998). As a result, agentic women are judged as less promotable and less hireable than agentic men (Eagly & Karau, 2002; Heilman, 2001). However, emerging research seems to contradict this long-established finding of disadvantage, revealing that displaying greater agency might lead others to perceive women as more hireable and better leaders than men (e.g., Schauberg & Flynn, 2017), that is, a female leader advantage.

What drives this seeming paradox—that women are rewarded as well as penalized when they are perceived as agentic? One possibility, which we empirically investigate, is that this paradox of agentic advantage and disadvantage for women may stem from differing conceptualizations of agency. For example, previous researchers have defined and measured agency in a variety of ways, including self-promotion and aggression in studies of gender backlash (Rudman et al., 2012), powerful and confident in work on gendered delegation of responsibility (Akinola et al., 2018), and independence and self-reliance in research on positive stereotype violations (Schauberg & Flynn, 2017). Moreover, there appears to be appreciable qualitative differences inherent in various types of agentic content. For example, some agentic content appears positively valenced (e.g., clever, disciplined), whereas other agentic content appears negatively valenced (e.g., aggressive, manipulative). Some agentic content appears to be more focused on relationship

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Data and analysis code, and study stimuli for all five studies are available at <https://osf.io/5xhkd/>.

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with others (e.g., controlling, independent), whereas other types of content appear to be more task based (e.g., competent, diligent). At times, agency seems to represent strongly imposed gender stereotypes for women (e.g., rebellious, arrogant), whereas at other times it appears to be weakly imposed on women (e.g., intelligent, Hall et al., 2019; Prentice & Carranza, 2002). Thus, heterogeneity in how agency has been conceptualized may have contributed to conflicting findings about female advantage and disadvantage.

In this paper, we seek to reconcile this paradox by testing if agentic advantage and disadvantage arises as a function of agency type. In the process of doing so, we develop CADDIS, a multifactor measure of agency that captures the disparate ways in which agency has been conceptualized and operationalized in gender and leadership research in the last 4 decades. Next, integrating research on stereotype content (Prentice & Carranza, 2002) and expectancy violation theory (Jussim et al., 1987), we posit that each agency factor in our multifactor agency measure can be categorized as either an agency *prescription* or *proscription* (Prentice & Carranza, 2002). Whereas *agency prescriptions* are perceived as socially desirable (Prentice & Carranza, 2002, p. 271), *agency proscriptions* are qualities that society deems socially undesirable for both gender groups. However, there also tends to be a difference in terms of how strongly prescriptions and proscriptions are imposed on men and women (Prentice & Carranza, 2002), and we argue that this difference determines how people then react to men and women who violate prescriptions and proscriptions. In sum, we test if an agentic advantage would occur when women are perceived to violate agency prescriptions, and if an agentic disadvantage would occur when women are perceived to violate agency proscriptions.

Drawing on existing analyses of gender stereotype content (Prentice & Carranza, 2002), we cast doubt on the presumption that the stereotypic expectations associated with women and leaders are in conflict. In fact, many agentic traits (e.g., independent, competent) deemed important for leadership are also seen as desirable in women (Prentice & Carranza, 2002), and limited research has examined what occurs when women are perceived to possess these agentic qualities. We propose and test the idea that as women demonstrate more of these desirable agentic qualities, they not only can avoid the social punishment documented in past research, but they can be advantaged in leadership evaluations relative to their male counterparts.

To our knowledge, our research is the first to provide a comprehensive consideration of the structure and content of the agency construct for gender and leadership. Our conceptualization of agency contributes to the field of study by offering a common language that gender researchers can use to specify the types of agency that drive their predictions. As a result, we believe that this new view of agency can generate a more inclusive and cohesive understanding of agentic biases within gender and leadership.

Gender Bias and Agency Stereotype Violations

Agentic traits have been frequently evoked in classic gender and leadership theories such as role congruity theory (Eagly & Karau, 2002), the lack of fit model (Heilman, 2001), as well as the status incongruity hypothesis (Rudman et al., 2012), to reveal the negative reactions that people have toward women who behave in ways that are counter to stereotypic expectations. So far, these theories have defined and operationalized agency using a myriad of qualities, perhaps because of Bakan's original conception of agency as "manifested

in various ways and various contexts" (Bakan, 1966, p. 15; see Appendix A for a nonexhaustive review of existing conceptualizations and measurements of agency). In role congruity theory, for example, Eagly and Karau (2002, p. 574) define agency as an "assertive, controlling, and confident tendency—for example, aggressive, ambitious, dominant, forceful, independent, self-sufficient, self-confident, and prone to act as a leader." In their test of the status incongruity hypothesis, Rudman and Glick (2001, p. 165) measured agency as "independent, competitive, autonomous, individualistic, hierarchical, and self-sufficient." In their exploration of the gender biases in academia, Madera et al. (2009) measured agency as assertive, confident, aggressive, ambitious, dominant, forceful, independent, daring, outspoken, and intellectual. Abele, Cuddy, et al. (2008) used over 100 items to assess agency, a further reflection of the various ways that agency can be captured.

When considering all the ways that agency has been conceptualized and measured, it is not clear that people would react negatively toward women who possess certain agentic characteristics like independent, self-assured, or competent, as would be predicted by classic gender and leadership theories. For example, some agentic qualities like competence and diligence appear to be positively valenced and thus may be socially desirable for people to possess in general, regardless of the target's gender (Judge et al., 2002; Prentice & Carranza, 2002). Indeed, in their analyses of gender stereotype content, Prentice and Carranza (2002) proposed that gender stereotypes of agency and communality vary along two dimensions, valence (positive/prescribed vs. negative/proscribed) and how strongly these stereotypes are imposed on men and women (strong vs. weak).

Gender prescriptions are positively valenced qualities that are considered socially desirable for both men and women to possess, and they also vary in terms of how strongly these are imposed on men and women. Whereas strong prescriptions are desirable traits that people strongly expect one gender group to possess relative to the other gender group, weak gender prescriptions are standards that a gender group might be excused for lacking (Prentice & Carranza, 2002). Agentic prescriptions (e.g., independent, self-assured) tend to be strong prescriptions for men and weak prescriptions for women, whereas communal prescriptions (e.g., warm, friendly) tend to be strong prescriptions for women and weak prescriptions for men. Relative to communal prescriptions, agentic prescriptions tend to be linked to higher status, and the prevalent desire to defend the existing gender hierarchy might account for why agentic content is more strongly prescribed for men while communal content is more strongly prescribed for women (Conway et al., 1996; Jost & Banaji, 1994; Rudman et al., 2012).

Gender proscriptions are negatively valenced qualities that are considered socially undesirable for both gender groups, and these also vary in terms of how strongly they are imposed on men and women. Whereas strong gender proscriptions are traits that people strongly expect the gender group to *not* possess relative to the other gender group, weak gender proscriptions are "allowable transgressions," that is, targets will be judged less harshly for possessing these undesirable qualities on the basis of their gender (Prentice & Carranza, 2002). Agentic proscriptions (e.g., rebellious, arrogant) tend to be strong proscriptions for women and weak proscriptions for men, whereas communal proscriptions (e.g., melodramatic, gullible) tend to be strong proscriptions for men and weak proscriptions for women. The status incongruity hypothesis argues that while displaying agentic proscriptions (e.g., dominance and

aggression) are socially undesirable, they are also effective means of seizing power, and thus women who demonstrate agentic proscriptions are particularly threatening to the gender status quo (Cheng et al., 2013; Rudman et al., 2012). Likewise, displays of communal proscriptions connote weakness, and men who demonstrate behaviors that result in a loss of status and power are negatively evaluated (Rosette et al., 2015; Rudman, 1998).

For our purposes, we focus on the evaluative consequences of agency prescriptions and proscriptions. Generally, both men and women are evaluated more favorably to the extent that they possess more socially desirable (i.e., prescriptions) and less socially undesirable qualities (i.e., proscriptions, Prentice & Carranza, 2002). However, we propose that the difference in how strongly prescriptions and proscriptions are imposed on men and women will shape gender differences in the strength of the relationship between agency traits and leadership evaluations. Drawing on expectancy violation theory, which suggests that interpersonal evaluations are shaped by category-based expectations (Jussim et al., 1987), we argue that an agentic advantage would emerge when women violate agency prescriptions, and an agentic disadvantage would emerge when women violate agency proscriptions.

Expectancy Violation Theory and Agentic Advantage and Disadvantage

Expectancy violation theory (Jussim et al., 1987) posits interpersonal evaluations become more extreme in the direction of the valence of the expectancy violation, and this effect is largely driven by physiological arousal and feelings of surprise (Bartholow et al., 2001). Positive expectancy violations occur when people are perceived to possess more favorable qualities than was expected, eliciting more extreme positive reactions. For instance, because of racial stereotypes, people may not expect Black Americans to be as successful as White Americans. When they encounter a successful Black American, they are surprised in a positive way, and these physiological responses are then responsible for greater extremity in positive evaluations (Jussim et al., 1987). In contrast, negative expectancy violations occur when people are perceived to possess more unfavorable qualities than was expected, eliciting more extreme negative reactions. For instance, because Whites expect other Whites to speak standard English, they evaluated nonstandard English-speaking White (vs. Black) Americans less favorably (Jussim et al., 1987; McKirnan et al., 1983). Returning to our current investigation, we suggest that expectancy violation theory provides a useful guidepost for the understanding of how people evaluate male and female leaders who violate prescriptive and proscriptive agency stereotypes.

Positive Expectancy Violation and Agentic Advantage

Agency prescriptions (e.g., independent, dedicated) are weak prescriptions for women and strong prescriptions for men. Therefore, we propose that a woman who displays agency prescriptions will be seen as demonstrating more favorable qualities than expected, eliciting a stronger positive expectancy violation, and causing displays of agentic prescriptions to be more strongly associated with favorable leadership evaluations for women. Conversely, perceivers may judge demonstrations of agency prescriptions by men (e.g., being self-directed and committed to work) to be

expected and unsurprising, attenuating the positive relation between demonstrations of agency prescriptions and favorable leadership evaluations.

Supporting our assertion, Schaumberg and Flynn (2017) found that when women demonstrated self-reliance—a weak agentic prescription for women—they were evaluated more positively than self-reliant men. As another instance where agency was measured using a weak agentic prescription for women, Rosette and Tost (2010) found that top female leaders were evaluated more favorably than male leaders, and this was due to increased inferences of competence. Furthermore, Lanaj and Hollenbeck (2015) found that the effect of demonstrating agentic extra-role and boundary spanning behaviors (e.g., bringing in new resources that help the team work effectively) on leadership promotability was stronger for women than for men. Taken together, findings from these studies corroborate our argument that a female agentic advantage occurs when women leaders demonstrate traits that are part of weak agentic prescriptions.

However, we assert that agentic advantage only occurs insofar as demonstrating these desirable qualities does not also violate strongly imposed gender stereotypes. For instance, studies demonstrating backlash often describe highly competent, independent, and self-assured women who demonstrated weak prescriptions but also appear to violate both strong agency proscriptions and strong communality prescriptions (e.g., “being hungry is everything,” Okimoto & Brescoll, 2010, pp. 927–928; “treating newcomers and established writers alike with the same vicious knife,” Rudman et al., 2012, p. 177). Therefore, we predict that to the extent that weak agency prescriptions are not accompanied by cues that also suggest a violation of strong gender stereotypes, *an agentic advantage is likely to occur for women when they violate agency prescriptions.*

Negative Expectancy Violation and Agentic Disadvantage

Because agentic proscriptions are strong proscriptions for women, we propose that women who display these traits would be perceived as possessing more undesirable qualities than expected, eliciting a negative expectancy violation. This in turn causes demonstrations of agency proscriptions to be more strongly associated with unfavorable leadership evaluations for women. Conversely, men may be punished to a lesser extent than women because these agentic proscriptions (e.g., dominance) are “allowable transgressions” for their gender group (Prentice & Carranza, 2002).

Consistent with these predictions, past research has shown that women were evaluated less favorably than men when they were perceived as being arrogant, controlling, rebellious, or stubborn (Rudman et al., 2012), violating these strongly imposed “ought-nots.” In their meta-analysis, Williams and Tiedens (2016) found that negative reactions toward women were specifically driven by perceptions of dominance—a strong agency proscription for women—and this occurs because of less favorable interpersonal evaluations. Indeed, to avoid having to hire dominant and controlling women, evaluators would go as far as changing the hiring criteria in order to justify hiring discrimination (Phelan et al., 2008). Women who were perceived as interpersonally abrasive, pushy, manipulative, and selfish were less likely to be recommended for fast tracked careers (Heilman et al., 2004), and were seen as less worthy of a promotion and less hireable for a job (Livingston et al., 2012;

Wilson et al., 2001). Therefore, we suggest that because agency proscriptions are more strongly imposed on women than men, *an agentic disadvantage is likely to occur for women when they are perceived to violate agency proscriptions.*

Transparency and Openness

We describe our sampling plan, all data exclusions, manipulations, and measures for all five studies in the present research, and we adhered to the *Journal of Applied Psychology* methodological checklist. Data and analysis code, and study stimuli for all five studies are available at <https://osf.io/5xhkd/>. Measurement invariance, confirmatory factor analyses, and discriminant validity results in Studies 2 and 4 were conducted using *R*. All other analyses were conducted using Stata 16. Study 3 was preregistered at: https://osf.io/92mvh/?view_only=9b3a8136466e4a32b887ddb362eeee1e. Human subjects review and approval for studies were granted by the institutional review boards of Duke University (Protocol number: C0777, Title: Intersectionality and the Agentic Penalty in Organization) and Tulane University (Protocol number: 2020-1432-TU Uptown, Title: Attitudes and beliefs in the workplace).

The Present Research

We conducted five studies to reconcile paradoxical findings on the agentic advantage and disadvantage in the gender and leadership literature. First, we aimed to conduct a comprehensive literature review to understand the myriad of ways that agency has been defined and operationalized in past research. We then developed a scale of agency by performing exploratory factor analysis (EFA) on the items gleaned from the literature review (Study 1) and validated the resulting factor structure using confirmatory factor analysis (CFA; Study 2). The resulting multifactor measure of agency, which we label as CADDIS, shows that the overarching measure of agency consists of six subcomponents: Competent agency, Ambitious agency, Dominant agency, Diligent agency, Independent agency, and Self-assured agency (i.e., CADDIS). Importantly, these different subdimensions of agency reflect distinct gender prescriptions and proscriptions for women. Based on this and guided by our theorizing about expectancy violations regarding these gender stereotypes as discussed above, we developed hypotheses regarding whether each agency factor would elicit agentic advantage versus disadvantage and empirically tested these predictions in Studies 3–5.

Study 1

We first conducted a literature review with the aim of compiling items that have been frequently used to describe agency in previous gender and leadership research (Hinkin, 1998). After performing content validation of the pool of items used to describe agency, we conducted an EFA, which reduces the set of observed variables to a smaller set of items that possesses construct validity (Hinkin, 1998).

Item Generation and Content Validation

We conducted information searches of articles from 15 top journals in organizational behavior and social psychology: *Academy of Management Journal*, *Administrative Science Quarterly*, *Journal of Applied Psychology*, *Journal of Experimental Social Psychology*,

Journal of Management, *Journal of Personality and Social Psychology*, *Journal of Social Issues*, *Organizational Behavior and Human Decision Processes*, *Organization Science*, *Personality and Social Psychology Bulletin*, *Personnel Psychology*, *Psychology of Women Quarterly*, *Psychological Science*, *Sex Roles*, *The Leadership Quarterly*. We chose them because they included sufficient articles that focus on agency in relation to gender and leadership outcomes.

Within these journals, we searched for articles using key words including gender, gender bias, gender prejudice, gender stereotype, gender differences, interpersonal dominance, role congruity, masculine, feminine, male, female, men, women, agency, agentic, communion, gender role, sex role, and communality in the article title and abstract.¹ We confined our search to English-only articles from a 45-year period (1974–2019) with adult subjects (more than 18 years old). We used 1974 as our starting point as the majority of the journals we reviewed started their publication on or after 1974. We also searched through the reference lists of relevant meta-analyses and review papers on gender differences. This process yielded 1,159 potential articles. We eliminated articles that did not explicitly measure the agency construct—that is, the researchers did not explicitly label the measures as “agency” in the methodological section of the paper. Following this protocol, we were left with 63 articles (list included in online Supplemental). These 63 articles yielded 148 unique adjectives and phrases (see Appendix B) used to operationalize agency. As the goal of any scale should be to balance sufficient content coverage with scale parsimony (Cronbach & Meehl, 1955), we dropped items that were infrequently used in the literature by eliminating items that appeared in three or fewer articles (see Appendix B). Next, to ensure there is sufficient variance in the scale, we collapsed items that are conceptually identical to each other (e.g., we considered “focus on the self” the same as “self-interested” and “demonstrating skill” the same as “skillful”). Finally, we dropped three items that were not used in established conceptualizations and definitions of agency (i.e., courageous, risk-taking, and athletic). While the decision to omit these three items was a judgment call, it is unlikely to influence the final content of the scale due to the limited number of items that were omitted. Therefore, we were left with 49 adjectives after this round of the item aggregation and elimination process. Finally, we provided a definition of each adjective in the CADDIS measure to ensure that evaluators have consistent and unambiguous interpretations of the items (Kaiser & Craig, 2005).²

¹ We included communion in our search because agency and communion are the two fundamental dimensions of social perception that are most frequently evoked in gender research. When we initially conceptualized this project, we were broadly interested in how agency and communion are measured in the gender literature, as previous research has alluded to the possibility that there may be different dimensions of agency and communion (Abele et al., 2016). Ultimately, we decided to focus on agency for two theoretically driven reasons: First, gender-based disadvantages are primarily driven by agency perceptions, and second, perception of communion has been empirically shown to not be as varied as agency (Abele et al., 2021). While we think it could still be promising to examine dimensions of communion, it is outside the purview of the present paper.

² While providing item definitions affords semantic precision, one limitation is that these items may be double-barreled. That said, “double-barreled items are not inherently poor,” and they can perform favorably compared with items targeting a single behavior (p. 323, Brutus & Fecteau, 2003). Therefore, in the present research, we opted for theoretical precision in developing the CADDIS measure.

Participants and Procedure

Based on existing sample size recommendations for EFA (Costello & Osborne, 2005), we sought to recruit 500 full- and part-time U.S. employees who had a supervisor at work. We obtained responses from 484 participants from Prolific Academic, an online panel that has been shown to provide high-quality data for academic research (Peer et al., 2017). We excluded two incomplete responses, as well as responses from 30 participants who experienced technical problems. The final sample contained 452 participants (265 women, 185 men, and 2 others; $M_{\text{age}} = 34.36$, $SD_{\text{age}} = 10.17$; 394 self-identified as Whites, 12 as Latinx, 3 as Blacks, 25 as Asians, 10 as biracial, 6 as other races, and 2 missing). Participants had an average work experience of 12.99 years ($SD = 10.16$) and an average organizational tenure of 4.52 years ($SD = 4.67$). In total, 236 male and 216 female supervisors were evaluated. Of the supervisors, 353 were identified as White, 12 as Black, 17 as Asian, 7 as Latinx, 7 as biracial, 5 as other races, and 51 missing.³ On average, participants interacted with their supervisors 14.26 hr per week and have worked with their supervisors for 2.97 years ($SD = 3.27$). Participants worked in a wide range of industries and held job titles such as “telephone interviewer,” “informational manager,” and “teacher” (full list available upon request). Their supervisors had corresponding job titles such as “team leader,” “product manager,” and “school principal.”

Participants were given the following instructions:

Please think about your current or most recent supervisor at work, and visualize his or her name in your mind. Think about the interactions and the experience that you had when working with this person. How would you describe him or her? On the following pages, we have provided you with a list of words describing your supervisor, and we would like you to indicate the extent he or she exhibited these traits at work.

They were then presented with the list of 49 items obtained from our literature review and indicated their agreement about whether their supervisor displayed these traits and behaviors at work on a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*). Observed ranges for all 49 agency items were 1–7.

Results

We performed EFA with maximum likelihood estimation to obtain the factor structure. The number of factors to be extracted was guided by a scree test, which indicated six-factor solution (all eigenvalues >1). We then specified the number of extracted factors to be six and employed oblique oblimin rotation. In the first two iterations, we dropped items with loadings below .40 or with cross-loadings of more than .40 on multiple factors (Hair et al., 1998). In the third iteration, we sought to reduce scale length by excluding items that possessed weaker loadings on their respective subscales. The final solution contained 25 items because it accounted for a substantial amount of total variance explained (74.82%), had factors with strong internal consistency (>.80), and was conceptually interpretable. We labeled the six factors as competent agency, ambitious agency, dominant agency, diligent agency, independent agency, and self-assured agency. The six factors had adequate alpha reliabilities, $\alpha_{\text{competent agency}} = .93$, $\alpha_{\text{ambitious agency}} = .84$, $\alpha_{\text{dominant agency}} = .88$, $\alpha_{\text{diligent agency}} = .90$, $\alpha_{\text{independent agency}} = .81$, $\alpha_{\text{self-assured agency}} = .88$. Please see Table 1 for loadings, communality, means, and standard deviations of the 49 items.

Discussion

Exploratory factor analyses yielded six distinct agency factors. We labeled the first factor competent agency, based on the high loadings from the following four items: Competent, capable, skillful, and masterful. This factor coincides with past conceptualization of agency as an instrumental stereotype related to a “task focused orientation” (Scott & Brown, 2006, p. 232), “task functioning and goal achievement” (Wojciszke & Abele, 2008, p. 1139), and is reflected in people’s ability to master a skill or to have the most pertinent experience relevant to one’s environment. Drawing from this conceptualization, agency has often been evoked in debates about whether people perceive women to lack competence (Heilman & Okimoto, 2007). Indeed, competent agency has been frequently described as intellect (Madera et al., 2009) and proficiency (Rosette et al., 2016). Thus, we define competent agency as “possessing the requisite ability and knowledge needed for a particular task or activity.”

We labeled the second factor ambitious agency based on the high loadings from the following three items: Status-seeking, aspire to lead, and ambition. This factor corresponds to past research conceptualizing agency as a manifestation of the need for achievement (Scott & Brown, 2006, p. 232) or a “strong will to power” (Okimoto & Brescoll, 2010, p. 927). Consistent with a general definition of ambition as the “desire to achieve ends, especially ends like success, power, and wealth” (Judge & Kammeyer-Mueller, 2012, p. 759), and with a specific consideration of ambitious agency as “the tendency to promote oneself in the service of status attainment and personal ambition” (Livingston, 2013, p. 7), we define ambitious agency as “possessing a determination or desire for achievement.”

We labeled the third factor dominant agency based on the high loadings from the following five items: Aggressive, dominant, controlling, forceful, and manipulative. This factor is consistent with how agency has primarily been conceptualized in the gender backlash literature (Rudman, 1998) as interpersonal control and “social dominance” (Rudman & Glick, 2001, p. 745). Consequently, dominance has been described as “controlling and arrogant” (Rudman et al., 2012, p. 166) and “demanding action” (Livingston et al., 2012, p. 356). Thus, we define dominant agency as “inclined to influence other people’s opinions and actions in an overbearing and prevailing manner.”

We labeled the fourth factor as diligent agency based on the high loadings from the following four items: Active, dedicated, task oriented, and hardworking. This factor dovetails with past conceptualization of agency as persistence and is perceived as a key quality needed for goal pursuit and attainment (Eagly et al., 2020). Drawing from general definitions of diligence as “the ability to be motivated from within and direct attention and effort toward a challenging goal” (Larson, 2000, p. 70) and “a sense of willpower, or determination to begin and maintain the effort needed to achieve goals” (Luthans & Jensen, 2002, p. 306), we define diligent agency as

³ We received many unfilled responses for the supervisor race question because we did not remind participants to respond to unfilled responses (i.e., use request response feature) for this question in Study 1. Across studies, we used the “request response” feature for most questions to keep missing data to a minimum. While this ensures that participants did not skip questions due to inattentiveness, participants can still opt not to respond to the items if they chose not to.

Table 1
Item Loadings, Communalities, Means, and Standard Deviations (Study 1)

Factors	Cronbach's α	Item	Competent	Ambitious	Dominant	Diligent	Independent	Self-assured	Communitarity	M	SD
Competent	0.93	<i>Analytical</i> : To reason logically	0.44	-0.05	-0.04	0.22	0.18	-0.03	0.48	5.19	1.51
		<i>Strong</i> : Possessing expertise in a certain area	0.56	-0.06	0.10	0.13	0.12	0.10	0.58	5.27	1.49
		<i>Responsible</i> : Can be depended on to fulfill obligation	0.47	-0.02	-0.03	0.43	0.13	-0.08	0.71	5.46	1.64
		<i>Trustworthy</i> : Can be relied on	0.46	-0.08	-0.10	0.38	0.15	-0.06	0.70	5.36	1.68
		<i>Competent</i> : Sufficiently qualified	0.81	-0.06	0.03	0.02	0.02	0.07	0.74	5.56	1.57
		<i>Capable</i> : Having ability to complete a task efficiently	0.74	0.02	-0.01	0.11	-0.01	0.09	0.73	5.61	1.52
		<i>Intelligent</i> : Possessing sound knowledge	0.84	-0.01	-0.09	-0.02	-0.05	0.11	0.77	5.63	1.43
		<i>Skillful (having skills)</i> : Possessing proficiency in relevant areas	0.81	-0.01	-0.03	0.06	-0.15	0.12	0.74	5.69	1.34
		<i>Masterful</i> : Possessing an in depth understanding of pertinent tasks	0.87	-0.01	0.05	-0.07	0.08	0.08	0.76	5.30	1.61
		<i>Power-seeking</i> : Looking to exert influence over others	-0.05	0.54	0.40	-0.04	-0.08	-0.02	0.64	4.48	1.91
		<i>Competitive</i> : oriented to perform better than others	0.02	0.69	0.07	0.09	0.03	-0.01	0.54	4.56	1.71
		<i>Self-interested</i> : Regard for one's own interest or advantage	-0.04	0.45	0.32	-0.11	-0.08	0.05	0.46	4.80	1.73
		<i>Status-seeking</i> : Reaching a higher standing relative to others	-0.02	0.76	0.18	-0.13	0.08	-0.06	0.71	4.53	1.80
		<i>Aspire to be leader</i> : A desire to move upward or higher than others	-0.05	0.79	-0.05	0.09	0.07	0.03	0.63	4.98	1.66
Dominant	0.88	<i>Ambitious</i> : Strong desire to achieve something or get ahead of others	0.02	0.77	-0.07	0.15	0.09	0.04	0.62	5.15	1.58
		<i>Outspoken</i> : Unreserved in speech.	-0.12	-0.04	0.41	0.06	0.18	0.34	0.45	5.17	1.66
		<i>Tough</i> : Capable of great endurance	0.20	-0.13	0.40	0.24	0.19	0.10	0.47	4.71	1.58
		<i>Influential</i> : Having great influence on others	0.39	-0.02	0.27	0.12	0.28	0.08	0.54	4.88	1.51
		<i>Feels superior</i> : Behaves like he or she is better than average	-0.12	0.41	0.41	-0.17	-0.01	0.06	0.58	4.32	1.98
		<i>Aggressive</i> : Vigorously commanding over others	-0.12	0.23	0.62	-0.08	-0.01	-0.04	0.59	3.48	2.04
		<i>Dominant</i> : Exerting authority over others	-0.02	0.08	0.72	0.04	0.01	0.12	0.67	4.70	1.74
		<i>Controlling</i> : Determining the behavior of others	0.06	0.06	0.84	0.09	-0.13	-0.01	0.72	4.27	1.81
		<i>Forceful</i> : Characterized as vigorous strength	0.07	-0.01	0.79	0.09	0.01	0.03	0.66	4.25	1.76
		<i>Manipulative</i> : Affecting the behavior of others for one's own purposes	-0.07	0.31	0.61	-0.17	-0.14	-0.02	0.71	3.89	2.06
		<i>Achievement-oriented</i> : Focusing on accomplishments	-0.02	0.18	-0.06	0.60	-0.26	0.17	0.46	5.51	1.34
		<i>Goal oriented</i> : Focusing on the end results	0.01	0.17	-0.02	0.56	-0.31	0.22	0.47	5.79	1.23
		<i>Determined</i> : Characterized by resolution	0.04	0.07	0.08	0.55	0.14	0.14	0.54	5.31	1.32
		<i>Objective</i> : Opinions and actions not influenced by personal feelings	0.26	0.02	-0.03	0.32	0.19	-0.08	0.35	4.46	1.66
Independent	0.81	<i>Active</i> : Characterized by energetic work	0.18	-0.02	0.06	0.66	0.20	-0.09	0.70	5.20	1.58
		<i>Dedicated</i> : Wholly committed to an end	0.13	-0.03	0.05	0.71	0.16	-0.01	0.74	5.50	1.49
		<i>Task oriented</i> : To focus on getting the job done	0.12	-0.06	0.10	0.65	0.05	0.07	0.62	5.63	1.43
		<i>Hardworking</i> : Working with diligence	0.25	-0.07	-0.06	0.61	0.12	-0.04	0.70	5.53	1.52
		<i>Autonomous</i> : Not subject to control by others	0.16	0.13	-0.08	0.12	0.31	0.15	0.33	5.12	1.48
		<i>Independent</i> : Not relying on others	0.21	0.19	-0.12	-0.01	0.55	0.10	0.50	4.67	1.72
		<i>Self-reliant</i> : Relying on oneself	0.11	0.04	0.11	-0.03	0.47	0.23	0.45	4.85	1.60
		<i>Individualistic</i> : Showing individuality in behavior and thoughts	-0.07	-0.02	-0.04	0.14	0.45	0.36	0.47	5.31	1.41
		<i>Self-direction</i> : Follows one's own thought or action	0.02	0.07	-0.03	0.13	0.42	0.37	0.54	5.32	1.36
		<i>Decisive</i> : Ability to make one's decisions firmly	0.20	-0.01	0.11	0.07	0.10	0.50	0.53	5.64	1.42
		<i>Bold</i> : To stand out distinctly	0.08	0.03	0.13	0.02	0.24	0.54	0.58	5.24	1.40
		<i>Confident</i> : Sure of one's talents and abilities	0.09	-0.10	0.12	0.15	0.27	0.41	0.53	5.36	1.53
		<i>Assertive</i> : Direct in putting forth one's views	-0.06	-0.06	0.16	0.12	0.08	0.58	0.49	5.62	1.35
		<i>Opinionated</i> : Expresses his or her own opinions	-0.17	-0.05	0.21	0.12	0.20	0.49	0.44	5.68	1.35
Self-assured	0.88	<i>Charismatic</i> : Possessing great charm	0.31	0.07	0.02	0.15	0.36	-0.06	0.50	4.55	1.76
		<i>Successful</i> : Having a favorable outcome	0.15	0.09	-0.05	0.39	0.23	0.18	0.40	5.33	1.33
		<i>Sincere</i> : Genuine or without pretense	0.34	-0.20	-0.18	0.29	0.22	0.01	0.60	4.97	1.74
		<i>Willing to take stand</i>	0.26	0.09	-0.08	-0.01	-0.12	0.63	0.54	5.76	1.31
		<i>Self-assured</i> : Having a firm belief in one's abilities	0.10	0.02	-0.01	0.01	-0.09	0.84	0.74	5.75	1.24
		<i>Self-efficacy</i> : Belief in one's capabilities	0.15	0.10	-0.06	-0.02	-0.06	0.82	0.76	5.80	1.21
		<i>Conviction</i> : Possessing certainty or steadfast belief	0.14	0.07	0.07	0.03	0.10	0.61	0.61	5.63	1.23

Note. $N = 452$. Bolded loadings are for items that were included in the final 25 item scale.

“demonstrating devotion and discipline toward one’s work or a particular purpose.”

We labeled the fifth factor as independent agency based on the high loadings from the following four items: Independent, self-reliant, individualistic, and self-direction. This factor taps into a central aspect of Bakan’s (1966) original depiction of agency, which is the tendency for people to act individually and separately. This aspect of agency is captured as “a focus on self and separation” (Helgeson, 1994, p. 414), “positive value placed on individuality” (Paulhus & John, 1998, p. 1039), and “isolation, alienation, and aloneness” (Bakan, 1966, p. 15). Consequently, agency has been measured in gender and leadership research as being self-reliant (Schaumburg & Flynn, 2017), in explorations of motivations of women in Science, Technology, Engineering, and Mathematics (STEM) as self-directed (Diekmann et al., 2010), and in explorations of gender bias in employment contexts as self-sufficient (Hoyt, 2012). Given its focus on independence and self-reliance, we define independent agency as “capable of acting on one’s own without relying on others.”

We labeled the sixth agency factor self-assured agency based on the high loadings from the following four items: Willing to take a stand, self-assured, self-efficacy, and conviction. This form of agency has been conceptualized in past research on gender diversity ideologies as reflecting “one’s beliefs in their ability to accomplish a number of goals and achieve success” (Martin & Phillips, 2017, p. 31). Thus, self-assured agency appears related to confidence (sometimes labeled as control beliefs; Skinner et al., 1988) and also resembles *self-efficacy*, an individual’s belief in his or her capabilities to accomplish specific tasks (Bandura, 1989). Therefore, we define self-assured agency as “showing certainty in one’s own personal capabilities and judgment.”

Study 1 clarified the structure of agentic content and revealed a six-factor measure of agency comprising of Competent, Ambitious, Dominant, Diligent, Independent, and Self-assured agency (CADDIS). This six-factor measure of agency merges previous varied considerations of agentic content and provides a cohesive framework that reflects the manner in which agency has evolved in gender and leadership research over the last 4 decades.

Study 2

In Study 2, we conducted a CFA to cross-validate the six-factor measure of agency using a sample of Masters of Business Administration students.

Method

Participants and Procedure

We sought to recruit as many participants as possible from a cohort of Masters of Business Administration (MBA) students in a southeastern university in the United States. We invited 447 students to participate in the survey. We received responses from 437 participants (response rate of 98%) and excluded 16 responses from participants who did not complete the survey. The final sample included 421 participants (277 men, 143 women, 1 unreported; $M_{age} = 28.34$, $SD_{age} = 2.47$; 190 participants indicated that they were White, 20 were Black, 53 were Latinx, 120 were Asian, 8 reported as other race, 29 were biracial, and 1 unreported). Participants had an average organizational tenure of 3.90 years prior

to beginning their MBA program ($SD = 2.21$). On average, participants worked with their supervisors for 2.27 years ($SD = 1.64$). A total of 301 male and 120 female supervisors were evaluated. Of the supervisors, 230 were identified as White, 45 as Latinx, 20 as Black, 92 as Asian, 12 as other races, 20 as biracial, and 2 unreported. Participants had job titles such as “deputy intelligence advisor,” “channel marketing manager,” and “senior account manager.” Their supervisors had corresponding job titles such as “senior intelligence advisor,” “sales director,” and “global account manager.” Participants had an average work experience of 5.60 years and worked in a wide range of industries, including financial services (15%), consulting (15%), health care services (11%), analytics (7%), nonprofit and educational sections (6%, full list upon request).

All participants were given the same instructions in Study 1, but this time they were only provided with the 25 items finalized from Study 1 (Appendix C). Participants rated each item on a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*, $\alpha_{\text{competent agency}} = .93$, $\alpha_{\text{ambitious agency}} = .84$, $\alpha_{\text{dominant agency}} = .92$, $\alpha_{\text{diligent agency}} = .83$, $\alpha_{\text{independent agency}} = .85$, $\alpha_{\text{self-assured agency}} = .86$). Observed ranges for all agency factors were 1–7, with the exception of self-assured agency ($Min = 1.5$, $Max = 7$).

Results

We used robust maximum likelihood CFA to examine the validity of the six factors of agency because it is less sensitive to violations of normality (Zhong & Yuan, 2011). In our CFA, we specified that the agency construct would consist of six correlated latent factors, that each item would have a greater than zero loading on its designated factor, zero loadings on all other factors, and uncorrelated measurement errors. We report four model fit statistics: Normed chi-square measure (χ^2/df), robust comparative fit index (CFI), robust Tucker–Lewis index (TLI), and the robust root mean square error of approximation (RMSEA).

Means, standard deviations, and correlations among variables are found in Table 2. Agency was adequately represented by six correlated first-order factors, $\chi^2(260) = 679.11$, $p < .001$, $\chi^2/df = 2.61$, CFI = .92, TLI = .91, RMSEA = .07 (see Table 3). Each item had a significant loading on the main factor (Anderson & Gerbing, 1988). Standardized loadings ranged from .62 to .90 ($ps < .01$). There were sometimes negative correlations (e.g., $r = -.19$, Table 2) between factors. Each factor had an Average Variance Extracted (AVE) greater than .5 ($AVE_{\text{competent agency}} = .72$, $AVE_{\text{ambitious agency}} = .65$, $AVE_{\text{dominant agency}} = .71$, $AVE_{\text{diligent agency}} = .57$, $AVE_{\text{independent agency}} = .59$, $AVE_{\text{self-assured agency}} = .61$, Fornell & Larcker, 1981, p. 45), providing support for discriminant validity.

We also tested four alternative factor structures that have been used in past research (Table 3). The first model we tested was a one-factor construct (e.g., Eagly & Karau, 2002; Scott & Brown, 2006). Second, we tested a two-factor construct comprising of positive and negative agency (e.g., Abele & Bruckmüller, 2011; Ybarra et al., 2008). Both dominant and ambitious agency have been found to elicit agentic disadvantage, suggesting that both agency factors may be particularly socially undesirable for women to possess (Okimoto & Brescoll, 2010; Rudman et al., 2012). Therefore, we tested a two-factor model with ambitious and dominant agency related items loading onto the negative agency factor and all other items loading onto the positive agency factor. Third, since some researchers have conceptualized ambition as a positive trait (Prentice & Carranza, 2002), we also tested

Table 2
Intercorrelations, Reliabilities, Means, and Standard Deviations Among Variables (Study 2)

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11
1. Competent agency	5.87	1.23	(0.93)										
2. Ambitious agency	5.45	1.46	0.17***	(0.84)									
3. Dominant agency	3.69	1.81	-0.19***	0.38***	(0.92)								
4. Diligent agency	5.83	1.12	0.61***	0.21***	-0.12*	(0.83)							
5. Independent agency	5.00	1.45	0.41***	0.09	0.10*	0.29***	(0.85)						
6. Self-assured agency	5.99	1.06	0.52***	0.31***	0.05	0.45***	0.34***	(0.86)					
7. Subordinate's age	28.34	2.48	-0.05	-0.02	0.04	-0.05	-0.10*	-0.11*					
8. Subordinate's gender (0 = Man, 1 = Woman)	0.34	0.47	-0.04	0.04	0.09	-0.02	0.06	-0.03	-0.13**				
9. Supervisor's gender (0 = Man, 1 = Woman)	0.28	0.45	-0.04	0.04	0.09	-0.02	0.06	-0.03	-0.24***	0.28***			
10. Supervisor race (1 = White, 0 = Non-White)	0.58	0.49	0.04	-0.11*	-0.09	0.04	0.03	0.05	-0.11*	0.01	0.03		
11. Subordinate race (1 = White, 0 = Non-White)	0.51	0.50	-0.05	-0.04	-0.01	-0.12*	0.04	0.05	-0.10*	0.01	-0.06	0.45***	

Note. $N = 421$.

* $p < .05$. ** $p < .01$. *** $p < .001$.

another two-factor structure model that had dominance related items loading on one factor and all other agency items loading on another factor. Finally, we tested a model in which all six first-order latent agency factors loaded onto one second-order latent factor. The fit of all four alternative factor structures was not as desirable as the six-factor structure of agency as indicated by the fit indices and the significant nested chi-square tests across models ($ps < .001$, robust CFIs were .42–.92, TLIs were .37–.91, and RMSEAs were .07–.19, Table 3).

Finally, we conducted tests of configural, metric, and scalar measurement invariance across supervisor's gender. Nested chi-square tests and Δ CFIs across models demonstrated support for these models (see online Supplemental).

Discussion

Study 2 confirmed the factor structure of the CADDIS measure and revealed that it achieved better fit relative to existing conceptualizations of agency. In the next studies, we develop and empirically test hypotheses regarding how women who demonstrate these different agentic qualities are evaluated, with the goal of offering a reconciliation of the agentic advantage and disadvantage paradox using the CADDIS measure. In addition, we sought to further evaluate the fit indices of the CADDIS measure.

Study 3

In Study 3, we developed hypotheses for each agency factor based on our theorizing about agentic advantage or disadvantage women may experience as a result of violating agency stereotypes. We propose that leadership promotability would be an appropriate criterion measure to test our hypotheses. Leadership promotability is an important aspect of leadership evaluation because it is explicitly concerned with perceptions about whether an employee is able to rise through the ranks. Given that agency in an organizational context is most adeptly demonstrated as the tendency to "get ahead" (Hogan et al., 1985), there is strong theoretical correspondence between the agency and leadership promotability. Further, leadership promotability is central to many considerations of agency-based biases in gender and leadership theories (Eagly & Steffen, 1984; Okimoto & Brescoll, 2010; Rudman et al., 2012; Schein, 1973), making it an appropriate criterion measure for our study.

Hypotheses Development

Competent Agency

Based on existing analyses of stereotype content, competence, as well as other items on our competent agency subscale (i.e., intelligence, capable, and skillful), is a weaker prescription for women than for men (Prentice & Carranza, 2002; Rudman et al., 2012). Therefore, we predict competence will elicit an agentic advantage, such that when women demonstrate competence, they will receive more favorable leadership evaluations. Conversely, because there are stronger expectations for men to be competent, there should be no expectation violation—and therefore no additional benefits for their leadership evaluation—when they demonstrate competence. Indeed, Rosette and Tost (2010) found that people evaluated top female leaders more positively than top male leaders, and this was

Table 3
Fit Indices for Agency Measure (Study 2)

Model	Scaling factor	χ^2	$\Delta\chi^2(\Delta df)$	<i>df</i>	χ^2/df	CFI	TLI	RMSEA
Six first-order correlated factors	1.29	679.11	—	260	2.61	0.92	0.91	0.07
One first-order factor	1.35	3317.51	1494.00(15)***	275	12.06	0.42	0.37	0.19
Two first-order correlated factors ^a	1.35	2137.06	822.92(14)***	274	7.80	0.65	0.61	0.15
Two first-order correlated factors ^b	1.34	2203.54	891.68(14)***	274	8.04	0.63	0.60	0.15
One second-order latent factor with six first-order latent factors	1.29	776.13	91.78(9)***	269	2.89	0.91	0.90	0.08

Note. CFI = comparative fit index; TLI = Tucker–Lewis index; RMSEA = root mean square of approximation. Robust fit indices. Scaled chi-square difference tests shown here are comparison between alternative models and the six factors model. $N = 421$.

^aFactors: Dominant + Ambitious (collapsed), Competent + Independent + Hardworking + Self-Assured (collapsed). ^bFactors: Dominant, Ambitious + Competent + Independent + Hardworking + Self-Assured (collapsed).

*** $p < .001$.

driven by increased inferences of perceived competence. Therefore, we predict that:

Hypothesis 1: Competence agency will elicit an agentic female advantage. That is, relative to men, women will be evaluated as more promotable as they display greater levels of competent agency.

Ambitious Agency

Although there is some evidence to the contrary (Abele, Uchronski, et al., 2008; Saha & Weeks, 2020; Wingrove & Fitzsimons, 2021), we found that most operationalizations of ambition in gender and leadership research appear to invoke strong proscriptions for women, as they emphasize a desire for status, success, and power that is in violation of the traditional gender hierarchy (Okimoto & Brescoll, 2010; Rudman et al., 2012). As such, it should elicit a disadvantage for women. In contrast, ambition conceived as an explicit striving toward power, achievement, and success is a weak agency proscription for men (Okimoto & Brescoll, 2010) and should not be disadvantageous for men. We thus predict the following:

Hypothesis 2: Ambitious agency will elicit an agentic female disadvantage. That is, relative to men, women will be evaluated as less promotable as they display greater levels of ambitious agency.

Dominant Agency

Some of the items used to measure dominance in past research (e.g., manipulative, controlling, forceful) appear to be stronger proscriptions for women than for men. Given that violations of strong agency proscriptions elicit negative expectancy violations, the effect of demonstrating dominant agency on lower leadership promotability may be stronger for women, eliciting agentic disadvantage. Conversely, as dominant agency appears to be a relaxed gender proscription and thus an “allowable transgression” for men, demonstrations of dominant agency may not be as strongly tied to unfavorable leadership evaluations. In sum, the degree of social penalties should differ across gender, such that the negative association between dominant agency and leadership promotability should be stronger for women. This prediction is consistent with research demonstrating that dominance elicits economic and social reprisals

toward agentic women (Rudman et al., 2012; Rudman & Glick, 2001; Rudman & Phelan, 2008; Williams & Tiedens, 2016).

Hypothesis 3: Dominant agency will elicit an agentic female disadvantage. That is, relative to men, women will be evaluated as less promotable as they display greater levels of dominant agency.

Diligent Agency

Diligent agency is likely a weaker prescription for women than for men (Abele, Cuddy, et al., 2008; Prentice & Carranza, 2002; Rudman et al., 2012). Devotion to one’s work is considered as one of the most desirable traits that employees should possess in Western societies (Dumas & Sanchez-Burks, 2015). Yet, such expectation is gendered and people less strongly expect women to be committed to their work because of their dual responsibilities at work and at home (Reid, 2015). Therefore, we predict that a positive expectancy violation would be elicited for women, resulting in an agentic advantage. Conversely, men have traditionally assumed breadwinner roles (Eagly & Steffen, 1984). Therefore, when men demonstrate a high commitment to work, there may be less of a positive expectancy violation, leading the relation between perceived diligent agency and favorable leadership evaluations to be weaker for them. More formally:

Hypothesis 4: Diligent agency will elicit an agentic female advantage. That is, relative to men, women will be evaluated as more promotable as they display greater levels of diligent agency.

Independent Agency

Based on existing analyses of stereotype content, independence is a weaker prescription for women than for men (Abele, Cuddy, et al., 2008; Prentice & Carranza, 2002; Rudman et al., 2012). That is, men are expected to be self-reliant, but women are excused for lacking independence, and this could have stemmed from perceived and/or actual differences in the tendency for women to be relational as opposed to separate from others (Cross & Madson, 1997). Thus, we propose that a positive expectancy violation is likely to result when women display independent agency. For instance, Schaumberg and Flynn (2017) found that the positive association

between independent agency and leadership promotability was stronger for women.

Hypothesis 5: Independent agency will elicit an agentic female advantage. That is, relative to men, women will be evaluated as more promotable as they display greater levels of independent agency.

Self-Assured Agency

Although past research has found that women who demonstrate self-assuredness—characterized by traits such as self-confidence (Powers & Zuroff, 1988) or self-promotion (Rudman, 1998)—are evaluated negatively, these manipulations of self-assuredness tend to be accompanied by dominant displays (e.g., direct eye contact, see Rudman, 1998, Study 1) that are strong proscriptions for women and weak proscriptions for men (Williams & Tiedens, 2016). In our literature review, however, we discovered that self-assured agency is primarily measured with traits (e.g., “self-assured” and “self-efficacious”) that are weak proscriptions for women and strong proscriptions for men (Prentice & Carranza, 2002). Indeed, popular advice for women to “lean in” and be more confident at work suggest that it is desirable for women to be self-assured and confident (Kay & Shipman, 2014; Sandberg, 2013). Given that a violation of weak proscriptions will likely result in positive expectancy violation, we predict that self-assured agency is likely to elicit an agentic advantage for women.

Hypothesis 6: Self-assured agency will elicit an agentic female advantage. That is, relative to men, women will be evaluated as more promotable as they display greater levels of self-assured agency.

Method

To test our hypotheses, we randomly assigned participants to one of two conditions (advantage vs. disadvantage) and provided participants with descriptions of the six types of agency. For each agency type, participants were asked to indicate whether they believed that women would be promoted at a higher (or lower) rate compared to men when they are perceived to possess such agency.

Participants and Procedure

Based on recommendations for sample size determination (Gervais et al., 2015), we aimed to collect data from 200 U.S. participants with full- and/or part-time employment who had a supervisor at work on Prolific Academic. We received responses from 197 participants. No participants experienced technical difficulties, and thus no data were excluded. The final sample consisted of 197 participants (93 women, 100 men, 4 other; $M_{\text{age}} = 33.26$, $SD_{\text{age}} = 9.46$). Of these participants, 149 self-identified as White, 10 as Latinx, 8 as Black, 17 as Asian, 8 as biracial, 4 as other, and 1 preferred not to disclose. Participants had an average organizational tenure of 4.93 years ($SD = 5.17$). They held jobs from a wide range of industries, such as “information services” (13.71%), “education services” (13.71%), and “other service industries” (12.69%) and had job titles such as “data entry clerk,” “special education teacher,” and “behavioral treatment technician.”

All participants were first asked to read the following:

Interpersonal evaluations can be an important determinant of whether an employee is promoted to a leadership position. However, people of different social groups (e.g., women, men) may receive different leadership promotability evaluations depending on the type of qualities that they are perceived to possess.

Next, we randomly assigned participants to either the agentic advantage or the disadvantage condition:

When evaluating the promotability of men and women, the possession of some qualities may result in more [advantages vs. disadvantages] to women than to men.

You will now see a list of different qualities. To what extent do you agree that when a female employee is perceived to possess the following qualities, a female [advantage vs. disadvantage] would result? That is, she would be promoted into a leadership role at a [higher vs. lower] rate compared to when a man possesses the same qualities?

All participants then read the definition of each of the six agency types. For example, in describing ambition, participants read, “We define ambition as ‘possessing a determination or desire for achievement.’ When someone possesses this quality, they are described as aspiring to be a leader, ambitious, and status-seeking.” In the advantage condition, participants were asked to indicate whether women would be promoted at a higher rate than men when displaying each type of agency (1 = *strongly disagree* and 7 = *strongly agree*). In the disadvantage condition, participants indicated whether women would be promoted at a lower rate than men when displaying each type of agency. Observed ranges for agreement levels in both experimental conditions were 1–7.

Two conditions need to be met to demonstrate support for our hypotheses. First, the average endorsement levels should be significantly higher than neutrality (the midpoint on the scale, or four) for competent, diligent, independent, and self-assured agency in the advantage condition. Conversely, average endorsement levels should be significantly higher than neutrality for dominant and ambitious agency in the disadvantage condition. Second, there should be significant differences in endorsement levels across the advantage and disadvantage conditions. That is, the magnitude of advantage should be stronger for competent, self-assured, independent, and diligent agency, whereas the overall degree of disadvantage should be stronger for ambitious and dominant agency.

Results

Means, standard deviations, and correlations among variables are found in Table 4.

Competent Agency

A one-sample *t* test found that endorsement scores in the advantage condition were significantly greater than four, $M_{\text{advantage}} = 4.96$, 95% CI [4.66, 5.26], $SD = 1.52$, $t(98) = 6.26$, $p < .001$, $d = .63$. Furthermore, an independent samples *t* test found that endorsement scores in the advantage condition were significantly higher than in the disadvantage condition, $M_{\text{disadvantage}} = 3.44$, 95% CI [3.03, 3.85], $SD = 2.04$, $t(195) = -5.94$, $p < .001$, $d = -.85$, supporting Hypothesis 1.

Table 4
Intercorrelations, Reliabilities, Means, and Standard Deviations Among Variables (Study 3)

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11
1. Competent agency	4.20	1.95	—										
2. Ambitious agency	4.29	1.80	0.63***	—									
3. Dominant agency	4.51	1.84	-0.03	0.38***	—								
4. Diligent agency	4.36	1.89	0.85***	0.54***	-0.05	—							
5. Independent agency	4.48	1.70	0.66***	0.69***	0.29***	0.68***	—						
6. Self-assured agency	4.48	1.67	0.56***	0.68***	0.40***	0.49***	0.68***	—					
7. Agency advantage or disadvantage (0 = disadvantage, 1 = advantage)	0.50	0.50	0.39***	0.09	-0.42***	0.42***	0.25***	0.02	—				
8. Participant job level ^a	2.99	1.26	-0.16*	-0.16*	-0.08	-0.11	-0.090	-0.02	0.01	—			
9. Participant age	33.26	9.46	0.20**	0.21**	0.17*	0.15*	0.13	0.17*	-0.05	-0.26***	—		
10. Participant gender (0 = Man, 1 = Woman)	0.48	0.50	-0.01	0.01	-0.04	-0.02	0.10	-0.01	-0.03	0.19**	-0.09	—	
11. Participant race (1 = White, 0 = Non-White)	0.75	0.43	-0.02	-0.05	-0.04	-0.04	-0.09	-0.01	0.01	-0.26***	0.31***	-0.01	—

Note. N = 197.

^a0 = nonmanagerial employee; 1 = first-level manager; 2 = mid-level manager; and 3 = top-level manager.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Ambitious Agency

We found that endorsement scores in the disadvantage condition were not significantly greater than four, $M_{disadvantage} = 4.12$, 95% CI [3.74, 4.51], $SD = 1.92$, $t(97) = .63$, $p = .530$, $d = .06$. Further, the endorsement scores in the disadvantage condition were not significantly higher than in the advantage condition, $M_{advantage} = 4.45$, 95% CI [4.12, 4.78], $SD = 1.66$, $t(195) = -1.30$, $p = .195$, $d = -.19$. Therefore, Hypothesis 2 was not supported.

Dominant Agency

Endorsement scores in the disadvantage condition were significantly greater than four, $M_{disadvantage} = 5.29$, 95% CI [4.96, 5.61], $SD = 1.62$, $t(97) = 7.87$, $p < .001$, $d = .79$. Further, endorsement scores in the disadvantage condition were significantly higher than in the advantage condition, $M_{advantage} = 3.75$, 95% CI [3.40, 4.09], $SD = 1.73$, $t(195) = 6.44$, $p < .001$, $d = .92$, supporting Hypothesis 3.

Diligent Agency

Endorsement scores in the agentic advantage condition were significantly greater than four, $M_{advantage} = 5.16$, 95% CI [4.86, 5.44], $SD = 1.45$, $t(98) = 7.89$, $p < .001$, $d = .79$. Further, endorsement scores in the advantage condition were significantly higher than in the disadvantage condition, $M_{disadvantage} = 3.56$, 95% CI [3.17, 3.95], $SD = 1.95$, $t(195) = -6.49$, $p < .001$, $d = -9.2$, supporting Hypothesis 4.

Independent Agency

Endorsement scores in the advantage condition were significantly greater than four, $M_{advantage} = 4.90$, 95% CI [4.61, 5.19], $SD = 1.45$, $t(98) = 6.18$, $p < .001$, $d = .63$. Further, endorsement scores in the advantage condition were significantly higher than in the disadvantage condition, $M_{disadvantage} = 4.05$, 95% CI [3.69, 4.42], $SD = 1.82$, $t(195) = -3.62$, $p < .001$, $d = -.52$, supporting Hypothesis 5.

Self-Assured Agency

Endorsement scores in the advantage condition were significantly greater than four, $M_{advantage} = 4.52$, 95% CI [4.21, 4.82], $SD = 1.55$, $t(98) = 3.31$, $p = .001$, $d = .62$. However, endorsement scores in the advantage condition were not significantly higher than in the disadvantage condition, $M_{disadvantage} = 4.44$, 95% CI [4.08, 4.80], $SD = 1.79$, $t(195) = -.32$, $p = .749$, $d = -.05$. Therefore, Hypothesis 6 was not supported.

The results held after correcting for family-wise error rate. Finally, although not hypothesized, we examined interactions between participant gender and our experimental conditions for dominant, ambitious, and self-assured agency and found several significant interactions (see online Supplemental).

Discussion

Study 3 found that people believed that, relative to men, women were evaluated more favorably for possessing competent agency, diligent agency, and independent agency, and less favorably when they possessed dominant agency. We did not find support for a self-assured agency advantage or an ambitious agency disadvantage.

One possibility might be due to the inherent ambiguity associated with the ambitious and self-assured agency constructs. Both self-assured and ambitious agency may simultaneously connote gender prescriptions and proscriptions, and thus neither agentic advantage nor disadvantage was clearly elicited.

Study 4

Study 4 examined if people's actual evaluations of an agentic woman were consistent with the lay beliefs established in Study 3. We also sought to establish the incremental and discriminant validity of the CADDIS measure relative to perceived masculinity measures, which have often been used to measure agency in gender and leadership research.

Method

Participants and Procedure

We sought to collect data from 1,000 U.S. participants with full- or part-time employment who had a supervisor at work on Prolific Academic. We received responses from 1,045 participants and excluded 40 incomplete responses, leaving a final sample of 1,005 participants. We excluded 36 participants who indicated that they had seen similar survey questions before. We also excluded an additional 15 participants who indicated they experienced technical problems. We conducted list-wise deletion of data from eight participants because of missing information on covariates used in subsequent analyses. The final sample consisted of 946 participants (433 women, 513 men). Of the participants, 613 self-identified as White, 54 as Latinx, 69 as Black, 141 as Asian, 16 as of other races, 53 as biracial. Participants had an average work experience of 10.33 years ($SD = 8.90$) and an average organizational tenure of 4.01 years ($SD = 4.00$).

In total, 547 male and 399 female supervisors were evaluated. Of the supervisors, 730 were White, 50 were Latinx, 64 were Black, 67 were Asian, 14 were of other races, and 21 were biracial. Participants interacted with their supervisors 12.85 hr per week and worked with their supervisors they evaluated for 3.19 years ($SD = 3.16$). Participants held jobs from a wide range of industries, such as "professional, scientific, and technical services" (15.01%), "administrative and support" (13.00%), and "health care and social assistance" (12.16%), and held job titles such as "litigation assistant," "product manager," and "senior financial assistant." Their supervisors had job titles such as "director of legal support," "product team director," and "assistant director of business operations."

As in Studies 1 and 2, participants were first asked to rate their current supervisors at work using the agency scale ($\alpha_{\text{competent agency}} = .93$, $\alpha_{\text{ambitious agency}} = .81$, $\alpha_{\text{dominant agency}} = .92$, $\alpha_{\text{diligent agency}} = .89$, $\alpha_{\text{independent agency}} = .86$, $\alpha_{\text{self-assured agency}} = .84$). Then, we measured perceived leadership promotability using a 3-item measure (adapted from Wayne et al., 1999). Because we assessed subordinates' perspectives about whether the target should be promoted, we omitted one item from the original four-item measure about whether the target should be selected as the rater's successor. We also reworded the items to reflect the subordinate's perspective (e.g., "I believe *my supervisor* should be promoted . . ."). Finally, two of the original items were negatively worded (e.g., should not be promoted), and we reworded these items in a more positive way. The resulting three items were averaged to form a composite score

(e.g., "I believe that my supervisor should be promoted to a higher-level position in my company," "It would be best for my company if my supervisor was promoted from his/her current level during the next five years," and "I believe that my supervisor has what it takes to be promoted to a higher-level position," $\alpha = .95$).

Finally, to assess the incremental validity of the agency scale in relation to gender attribute measures, we used the 20-item measure of the Bem Sex Role Inventory (Bem, 1977, $\alpha = .89$) and the 16-item Extended Personal Attributes Questionnaire measure (Spence et al., 1979; Ward et al., 2006; $\alpha_{\text{positive masculinity subscale}} = .76$, $\alpha_{\text{negative masculinity scale}} = .89$). We counterbalanced the order that the Bem Sex Role Inventory (BSRI) and Personal Attributes Questionnaire (PAQ) measures were presented. Observed ranges for all measures, including leadership promotability, agency, and PAQ measures, were 1–7, with the exception of the BSRI measure ($Min = 1.1$, $Max = 7$). Finally, participants reported sociodemographic characteristics of their supervisors.

Since correlational studies are particularly susceptible to omitted variable problems (Shen & Joseph, 2020), to test the robustness of the results, we included covariates that may be expected to be theoretically related to a gender bias in evaluations of leaders. First, we controlled for supervisor's job level because past gender and leadership research has found that gender differences in leadership evaluations might be emphasized at higher levels of the organizational hierarchy [0 = nonmanagerial employee, 1 = first-level manager (e.g., Team leader, Shift supervisor, Office manager), 2 = mid-level manager (e.g., Plant manager, Division manager), and 3 = top-level manager (e.g., Chief Executive Officer), Eagly & Karau, 2002; Paustian-Underdahl et al., 2014]. Second, Eagly and Karau (2002) argued that the gender composition of the workplace and industry is likely to influence reactions toward agentic women, and therefore we controlled for the percentage of men in the company, the percentage of men in the senior management team, as well as the gender ratio of the industry using estimates obtained from U.S. Bureau of Labor Statistics (2020). Finally, we controlled for participant's gender to account for demographic similarity bias (0 = man, 1 = woman, Turban & Jones, 1988). We note that the analyses presented here remained significant even when not controlling for these covariates.

Results

Means, standard deviations, and correlations among variables are found in Table 5. With the exception of dominant agency ($r = -.21$, $p < .001$), all other agency factors were positively related with greater perceived leadership promotability ($r_s = .32-.68$, $p_s < .001$). Supervisor gender was not significantly correlated with any of the six agency factors.

Test of Model Fit

We first tested the six-factor model of agency and found a desirable model fit, $\chi^2(260) = 923.66$, $p < .001$, $\chi^2/df = 3.55$, CFI = .95, TLI = .94, RMSEA = .06. This six-factor model also obtained a more desirable fit relative to alternative models (Table 6).

Tests of Measurement Invariance

Tests configural, metric, and scalar measurement invariance across supervisor's gender and found support for measurement invariance (see online Supplemental, Table S2).

Table 5
Intercorrelations, Reliabilities, Means, and Standard Deviations Among Variables (Study 4)

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
1. Competent agency	5.95	1.11	(.93)																				
2. Ambitious agency	5.19	1.25	0.20***	(.81)																			
3. Dominant agency	3.38	1.69	-0.25***	0.29***	(.92)																		
4. Diligent agency	5.86	1.11	0.75***	0.25***	-0.19***	(.89)																	
5. Independent agency	5.39	1.23	0.59***	0.16***	-0.07	0.54***	(.86)																
6. Self-assured agency	5.78	1.02	0.63***	0.31***	-0.06*	0.63***	0.56***	(.84)															
7. Leader promotability	5.09	1.66	0.68***	0.32***	-0.21***	0.66***	0.49***	0.54***	(.95)														
8. Bem Sex Role Inventory	4.91	0.87	0.53***	0.48***	0.28***	0.55***	0.56***	0.61***	0.55***	(.89)													
9. PAQ-M+	5.16	0.93	0.49***	0.38***	0.05	0.53***	0.48***	0.57***	0.49***	0.69***	(.76)												
10. PAQ-M-	2.94	1.52	-0.44***	0.17***	0.65***	-0.45***	-0.26***	-0.28***	-0.42***	-0.01	-0.18***	(.89)											
11. Subordinate's job level ^a	0.55	0.73	-0.02	0.23***	0.23***	-0.01	-0.07*	0.04	0.06	0.13***	0.06	0.19***											
12. Supervisor's job level ^a	1.72	0.77	0.06	0.13***	0.10**	0.06*	0.01	0.11**	0.04	0.12***	0.11***	0.06	0.47***										
13. Percentage of men in company	53.19	20.33	0.07	0.07*	0.05	0.02	0.01	0.01	0.09**	0.09**	0.03	0.01	0.10**	0.04									
14. Percentage of men in senior management	62.91	24.90	0.04	0.07*	0.01	-0.01	-0.01	0.02	0.04	0.06	0.02	-0.01	0.04	0.03	0.59***								
15. Percentage of women in industry	50.92	16.35	-0.02	-0.03	-0.05	-0.03	-0.01	-0.02	-0.05	-0.09**	-0.02	-0.05	-0.10**	-0.01	-0.47***	-0.32***							
16. Subordinate's age	31.92	9.33	-0.01	0.08*	0.16***	0.03	0.04	0.08*	-0.06*	0.10**	0.09**	0.13***	0.20***	0.12***	-0.04	-0.01	-0.05						
17. Subordinate's gender (0 = Man, 1 = Woman) ^b	0.46	0.50	0.03	-0.03	0.02	0.04	0.06	0.08*	-0.06	0.01	0.03	-0.02	-0.10**	0.03	-0.28***	-0.12***	0.25***	-0.06					
18. Supervisor's gender (0 = Man, 1 = Woman) ^b	0.42	0.49	-0.01	-0.05	0.01	0.02	0.01	0.04	-0.06	-0.07*	-0.02	-0.03	-0.14***	-0.10**	-0.36***	-0.39***	0.31***	-0.04	0.39***				
19. Supervisor race (1 = White, 0 = Non-White)	0.77	0.42	0.13***	0.01	-0.01	0.11***	0.09**	0.08*	0.13***	0.08*	0.06	-0.06	0.15***	0.11**	0.06	0.02	-0.06*	0.16***	-0.03	-0.06			
20. Subordinate race (1 = White, 0 = Non-White)	0.65	0.48	-0.04	0.01	0.05	0.01	-0.01	-0.01	-0.07*	0.01	0.01	0.06*	0.11***	0.06	-0.03	-0.02	0.01	0.26***	-0.01	0.03	0.27***		

Note. PAQ = Personal Attributes Questionnaire. Values in parentheses are Cronbach's α .

^a Job level was coded as 0 = nonmanagerial employee, 1 = first level manager, 2 = mid-level manager, 3 = top level manager. ^b Gender was coded 0 = Men, 1 = Women.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 6
Fit Indices for Agency Measure (Study 4)

Model	Scaling factor	χ^2	$\Delta\chi^2(\Delta df)$	<i>df</i>	χ^2/df	CFI	TLI	RMSEA
Six first-order correlated factors	1.39	923.66	—	260	3.55	0.95	0.94	0.06
One first-order factor	1.41	5455.84	3480.80(15)***	275	19.84	0.56	0.52	0.17
Two first-order correlated factors ^a	1.41	3136.16	1733.50(14)***	268	11.70	0.76	0.74	0.13
Two first-order correlated factors ^b	1.40	3154.50	1868.40(14)***	274	11.51	0.76	0.74	0.13
One second-order latent factor with six first-order latent factors	1.38	1067.49	163.47(9)***	269	3.97	0.93	0.93	0.07

Note. CFI = comparative fit index; TLI = Tucker–Lewis index; RMSEA = root mean square of approximation. Robust fit indices. Scaled chi-square difference tests shown here are comparison between alternative models and the six factors model. $N = 946$.

^aFactors: Dominant + Ambitious, Competent + Independent + Hardworking + Self-Assured (collapsed). ^bFactors: Dominant, Ambitious + Competent + Independent + Hardworking + Self-Assured (collapsed).

*** $p < .001$.

Hypothesis Testing

Next, we tested Hypotheses 1–6 by conducting six moderated regressions predicting leadership promotability. If the Supervisor gender \times Agency type interaction was significant, we conducted follow-up simple slopes analyses to examine support for a female agentic advantage (H1, H4, H5, and H6) and disadvantage (H2 and H3).

Competent Agency. A moderated linear regression found that the two-way interaction between supervisor gender and competent agency was significant, $b = 0.19$, 95% CI [0.05, 0.33], $SE = 0.07$, $t(937) = 2.64$, $p = .008$, $\eta^2 = 0.007$ (Table 7, Model 2). Simple slopes indicated that the more competent both female and male supervisors were perceived to be, the more promotable they were also perceived, $b_{\text{male supervisor}} = 0.93$, 95% CI [0.83, 1.03], $SE = 0.05$, $t(937) = 18.81$, $p < .001$; $b_{\text{female supervisor}} = 1.12$, 95% CI [1.02, 1.22], $SE = 0.05$, $t(937) = 21.93$, $p < .001$ (Figure 1). However, the interaction term—which is a statistical test of whether the simple slopes for female (vs. male) supervisors was significantly different (Dawson & Richter, 2006)—was significant, suggesting that the relation between greater perceived competent agency and leadership promotability was stronger for women than for men, thus supporting Hypothesis 1.

Ambitious Agency. We did not find a significant two-way interaction between supervisor gender and ambitious agency, $b = -0.07$, 95% CI [-0.23, 0.10], $SE = 0.08$, $t(937) = -0.82$, $p = .415$, $\eta^2 = .0007$ (Table 7, Model 3). Therefore, Hypothesis 2 was not supported.

Dominant Agency. A moderated linear regression found a significant interaction between dominant agency and supervisor's gender, $b = -0.19$, 95% CI [-0.32, -0.07], $SE = 0.06$, $t(937) = -3.11$, $p = .002$, $\eta^2 = 0.01$ (Figure 1, Table 7, Model 4). Simple slopes analyses indicated that women who were perceived as more dominant were perceived as less promotable, $b = -0.33$, 95% CI [-0.42, -0.24], $SE = 0.05$, $t(937) = -6.99$, $p < .001$, and this was also the case for men, $b = -0.13$, 95% CI [-0.22, -0.05], $SE = .04$, $t(937) = -3.24$, $p = .001$. However, the significant two-way interaction indicated that the simple slope for female supervisors was significantly steeper, suggesting that the negative association between dominant agency and leadership promotability was stronger for women, thus supporting Hypothesis 3.

Diligent Agency. A moderated linear regression found a significant two-way interaction between supervisor gender and diligent

agency, $b = 0.21$, 95% CI [0.07, 0.35], $SE = 0.07$, $t(937) = 2.87$, $p = .004$, $\eta^2 = 0.009$ (Table 7, Model 5, Figure 1). Simple slopes indicated that the more diligent both male and female supervisors were perceived to be, the more promotable both male, $b = 0.89$, 95% CI [0.79, 0.99], $SE = .05$, $t(937) = 17.83$, $p < .001$, and female supervisors, $b = 1.10$, 95% CI [0.99, 1.20], $SE = 0.05$, $t(937) = 20.78$, $p < .001$, were perceived to be. However, the significant two-way interaction indicated that the simple slope for female supervisors was significantly steeper, which suggest that the relation between greater diligent and greater leadership promotability was stronger for women. Therefore, Hypothesis 4 was supported.

Independent Agency. A moderated linear regression found a significant two-way interaction between supervisor gender and independent agency, $b = 0.27$, 95% CI [0.12, 0.42], $SE = 0.08$, $t(937) = 3.50$, $p < .001$, $\eta^2 = 0.013$ (Table 7, Model 6, Figure 1). Simple slopes indicated that the more independent both women and men supervisors were perceived to be, the more promotable both male, $b = 0.55$, 95% CI [0.45, 0.65], $SE = 0.05$, $t(937) = 10.91$, $p < .001$, and female supervisors, $b = 0.82$, 95% CI [0.71, 0.93], $SE = 0.06$, $t(937) = 14.33$, $p < .001$, were perceived to be. However, the significant two-way interaction indicated that the simple slope for female supervisors was significantly steeper, which suggests that women were evaluated more favorably than men as they were perceived to be more independent, supporting Hypothesis 5.

Self-Assured Agency. We did not find a significant two-way interaction between supervisor gender and self-assured agency, $b = 0.11$, 95% CI [-0.06, 0.28], $SE = 0.09$, $t(937) = 1.19$, $p = .234$, $\eta^2 = 0.002$ (Table 7, Model 7). Therefore, Hypothesis 6 was not supported.

Since participant gender may influence how leaders are perceived, we further tested the moderating role of participant gender. We tested six three-way Participant gender \times Supervisor gender \times Agency interactions predicting leadership promotability and did not find significant interactions (see online Supplemental). Further, participant gender might also influence the degree to which certain types of agency are perceived for male and female supervisors. To examine this possibility, we examined the interactive effects of participant gender and supervisor gender predicting the six agency dimensions and only found a significant interaction for ambitious agency. Since we did not observe significant interactions for dominant agency, competent agency, diligent agency, and independent agency, it did not appear that agentic advantage and disadvantage were driven by the fact that participant gender influenced the degree that certain types of agency were perceived for male and female supervisors.

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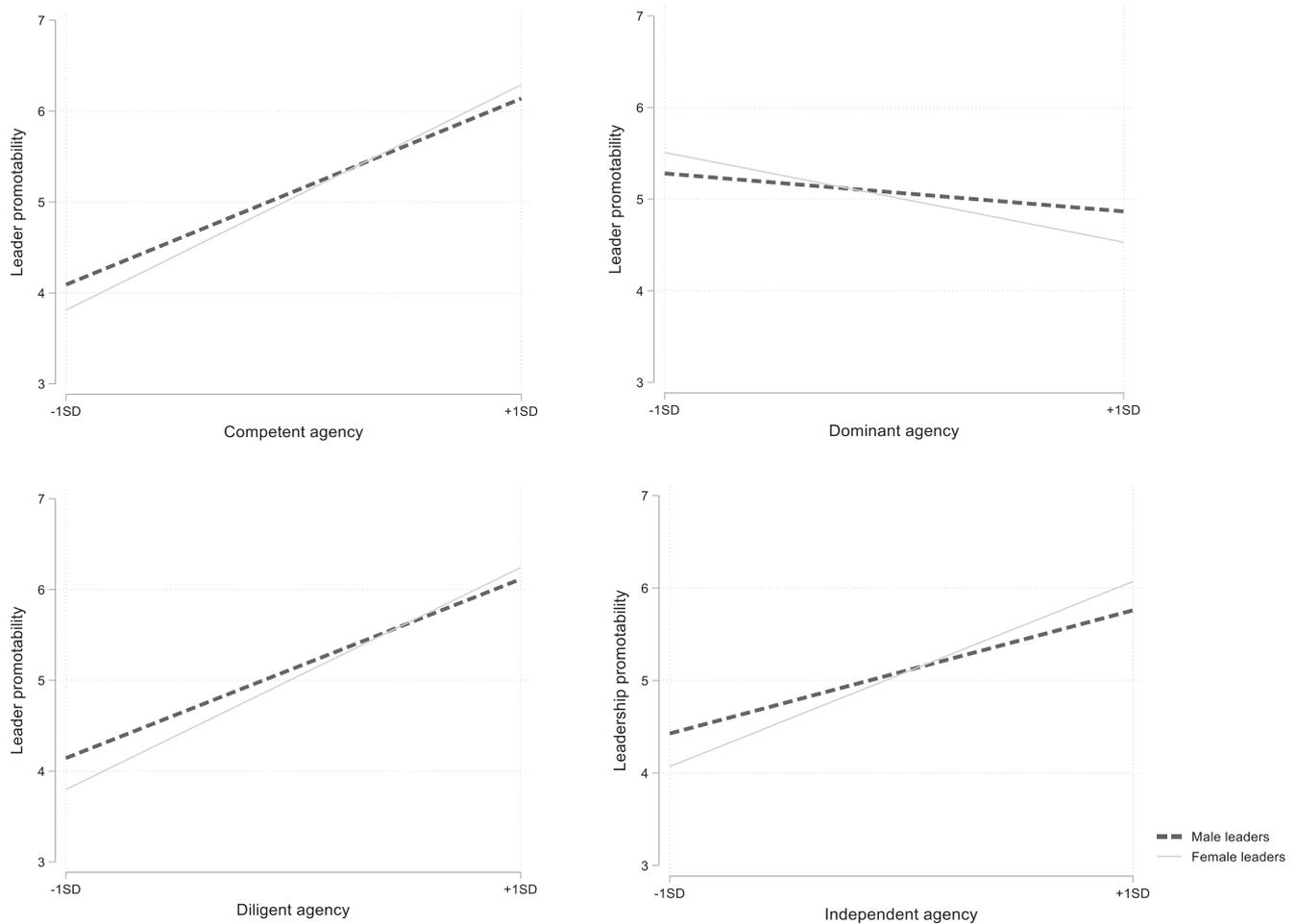
Table 7
Interactive Effects of Agency and Supervisor's Gender Predicting Leader Promotability (Study 4)

Variable	Perceived promotability															
	Model 1			Model 2: Competent agency			Model 3: Ambitious agency			Model 4: Dominant agency						
	<i>b</i>	<i>SE</i>	<i>t</i>	95% CI	<i>b</i>	<i>SE</i>	<i>t</i>	95% CI	<i>b</i>	<i>SE</i>	<i>t</i>	95% CI				
1. Constant	4.71***	0.35	13.58	[4.03, 5.40]	-0.34	0.38	-0.88	[-1.08, 0.41]	2.64***	0.44	5.96	[1.77, 3.50]	5.12***	0.36	14.24	[4.42, 5.83]
2. Supervisor's gender ^a	-0.05	0.13	-0.39	[-0.31, 0.21]	-1.19**	0.43	-2.75	[-2.04, -0.34]	0.30	0.44	0.67	[-0.57, 1.17]	0.63*	0.24	2.57	[0.14, 1.10]
3. Subordinate's gender ^a	-0.12	0.12	-1.00	[-0.36, 0.12]	-0.23*	0.09	-2.59	[-0.40, -0.06]	-0.09	0.12	-0.76	[-0.32, 0.14]	-0.09	0.12	-0.74	[-0.32, 0.14]
4. Supervisor job level	0.08	0.07	1.19	[-0.05, 0.22]	0.01	0.05	0.16	[-0.09, 0.11]	-0.01	0.07	-0.07	[-0.14, 0.13]	0.12	0.07	1.78	[-0.13, 0.26]
5. Percentage men in company	0.01	0.01	1.95	[0.01, 0.01]	0.01	0.01	0.86	[-0.01, 0.01]	0.01	0.01	1.76	[-0.01, 0.01]	0.01*	0.01	2.35	[0.01, 0.02]
6. Percentage men in management	-0.01	0.01	-0.47	[-0.01, 0.01]	-0.01	0.01	-0.68	[-0.01, 0.01]	-0.01	0.01	-0.78	[-0.01, 0.01]	-0.01	0.01	-0.74	[-0.01, 0.01]
7. Percentage women in industry	0.01	0.01	0.08	[-0.01, 0.01]	-0.01	0.01	-0.13	[-0.01, 0.01]	0.01	0.01	0.02	[-0.01, 0.01]	-0.01	0.01	-0.26	[-0.01, 0.01]
8. Competent agency					0.93***	0.05	18.81	[0.82, 1.03]								
9. Ambitious agency									0.45***	0.06	7.98	[0.34, 0.56]				
10. Dominant agency													-0.13***	0.04	-3.24	[-0.22, -0.06]
11. Diligent agency																
12. Independent agency																
13. Self-assured agency																
14. Agency type × Supervisor gender					0.19**	0.07	2.64	[0.05, 0.33]								
<i>R</i> ²			0.01				0.48									
<i>F</i>			1.83*				106.63***									8.85***
<i>Df</i>			939				937									937
ΔR^2							0.47***									0.06***
ΔF							416.54***									29.55***

Variable	Perceived promotability											
	Model 5: Diligent agency			Model 6: Independent agency			Model 7: Self-assured agency					
	<i>b</i>	<i>SE</i>	<i>t</i>	95% CI	<i>b</i>	<i>SE</i>	<i>t</i>	95% CI	<i>b</i>	<i>SE</i>	<i>t</i>	95% CI
1. Constant	-0.39	0.39	-1.00	[-1.16, 0.38]	1.77***	0.41	4.33	[0.97, 2.57]	0.14	0.45	0.32	[-0.74, 1.02]
2. Supervisor's gender ^a	-1.33**	0.44	-3.05	[-2.19, -0.48]	-1.47***	0.43	-3.45	[-2.30, -0.63]	-0.74	0.53	-1.39	[-1.78, 0.31]
3. Subordinate's gender ^a	-0.21*	0.09	-2.27	[-0.38, -0.03]	-0.24*	0.11	-2.33	[-0.45, -0.04]	-0.26*	0.10	-2.52	[-0.46, -0.06]
4. Supervisor job level	-0.01	0.05	-0.04	[-0.11, 0.10]	0.09	0.06	1.53	[-0.03, 0.21]	-0.04	0.06	-0.62	[-0.15, 0.08]
5. Percentage men in company	0.01	0.01	1.87	[-0.01, 0.01]	0.01	0.01	1.84	[-0.01, 0.01]	0.01*	0.01	2.17	[0.01, 0.01]
6. Percentage men in management	-0.01	0.01	-0.05	[-0.01, 0.01]	-0.01	0.01	-0.24	[-0.01, 0.01]	-0.01	0.01	-0.92	[-0.01, 0.01]
7. Percentage women in industry	0.01	0.01	1.05	[-0.01, 0.01]	0.01	0.01	0.24	[-0.01, 0.01]	0.01	0.01	0.74	[-0.01, 0.01]
8. Competent agency												
9. Ambitious agency												
10. Dominant agency												
11. Diligent agency	0.89***	0.05	17.83	[0.79, 0.99]								
12. Independent agency					0.55***	0.05	10.91	[0.45, 0.65]				
13. Self-assured agency									0.84***	0.06	13.83	[0.72, 0.96]
14. Agency type × Supervisor gender	0.21**	0.07	2.87	[0.07, 0.35]					0.11	0.09	1.19	[-0.07, 0.28]
<i>R</i> ²			0.45				0.27***				0.30	
<i>F</i>			96.10***				42.41***				51.23***	
<i>Df</i>			937				937				937	
ΔR^2			0.45***				0.25***				0.29***	
ΔF			374.55***				162.25***				197.12***	

Note. *N* = 946. Unstandardized betas.
^a Men = 0, Women = 1.
 * *p* < .05. ** *p* < .01. *** *p* < .001.

Figure 1
Interactive Effects of Agency and Supervisor Gender Predicting Leader Promotability (Study 4)



Test of Incremental and Discriminant Validity in Relation to Gender Stereotype Measures

Next, we examined the incremental validity of the six agency factors relative to perceived masculinity measures in predicting perceived leader promotability. Using hierarchical linear regression, we included all covariates as well as gender stereotype measures as predictors of perceived leader promotability (Table 8, Model 1, $R^2 = .48$). In the second model, we added the six agency variables and found a significant increase in the amount of variance explained (Table 8, Model 2, $R^2 = .60$, $\Delta R^2 = 0.11$, $p < .001$), suggesting that the six-factor agency measure possessed incremental validity relative to the BSRI and PAQ.

Finally, we examined the discriminant validity of the masculinity measures and respective agency factor if the zero-order correlations exceeded 0.5 (i.e., a large effect size, Cohen, 1992). Across seven scaled chi-square tests, we found that agency factors possessed discriminant validity relative to gender stereotype measures ($ps < .001$, see online Supplemental and Table S3 for details).

Discussion

Using CADDIS, we found support for our thesis that agentic advantage and disadvantage is elicited by different types of agency. The positive associations between competent, diligent, and independent agency and leadership promotability were stronger for women than for men, while the negative association between dominant agency and leadership promotability was stronger for women. Again, as in Study 3, we did not find support for a self-assured agency advantage or an ambitious agency disadvantage. Thus, Hypotheses 2 and 6 were not supported.

We did not find that perceptions of agency varied significantly across supervisor's gender. Although this effect was somewhat surprising, it also seemed reasonable because we assessed perceptions of men and women who were already leaders, and thus both men and women likely have already demonstrated the sufficient types of agency under consideration here to occupy their current leadership roles, leading to an absence of perceived gender differences. Indeed, except for dominant agency, the mean endorsement levels of competent, ambition, diligent, independent, and self-assured

Table 8
Incremental Validity of the CADDIS Scale (Study 4)

Variable	Perceived promotability							
	Model 1				Model 2			
	<i>b</i>	<i>SE</i>	<i>t</i>	95% CI	<i>b</i>	<i>SE</i>	<i>t</i>	95% CI
1. Constant	0.95**	0.36	2.65	[0.25, 1.65]	-1.43***	0.36	-3.98	[-2.14, -0.72]
2. Supervisor's gender ^a	0.01	0.09	0.06	[-0.18, 0.19]	-0.03	0.08	-0.35	[-0.19, 0.14]
3. Subordinate's gender ^a	-0.23*	0.09	-2.59	[-0.40, -0.05]	-0.22**	0.08	-2.76	[-0.37, -0.07]
4. Supervisor job level	-0.01	0.05	-0.10	[-0.11, 0.10]	-0.03	0.05	-0.69	[-0.12, 0.06]
5. BSRI	0.90***	0.06	14.35	[0.77, 1.02]	0.47***	0.07	6.44	[0.32, 0.61]
6. PAQ-M+	0.18**	0.06	3.06	[0.06, 0.30]	0.02	0.05	0.45	[-0.08, 0.13]
7. PAQ-M-	-0.44***	0.03	-16.45	[-0.49, -0.39]	-0.19***	0.03	-5.46	[-0.26, -0.12]
8. Percentage men in company	0.01	0.01	1.41	[-0.01, 0.01]	0.01	0.01	1.32	[-0.01, 0.01]
9. Percentage men in management	-0.01	0.01	-0.58	[-0.01, 0.01]	-0.01	0.01	-0.84	[-0.01, 0.01]
10. Percentage women in industry	0.01	0.01	0.42	[-0.01, 0.01]	0.01	0.01	0.28	[-0.01, 0.01]
11. Competent agency					0.42***	0.05	7.88	[0.32, 0.53]
12. Ambitious agency					0.21***	0.03	6.36	[0.15, 0.28]
13. Dominant agency					-0.11***	0.03	-3.65	[-0.17, -0.05]
14. Diligent agency					0.24***	0.05	4.54	[0.14, 0.35]
15. Independent agency					0.03	0.04	0.82	[-0.04, 0.11]
16. Self-assured agency					-0.02	0.05	-0.33	[-0.12, 0.08]
<i>R</i> ²			0.48				0.60	
<i>F</i>			97.54***				92.32***	
<i>Df</i>			936				930	
ΔR^2							0.11***	
ΔF							44.09***	

Note. BSRI = Bem Sex Role Inventory; PAQ-M = Personal Attributes Questionnaire (Negative Masculinity); CADDIS = Competent agency, ambitious agency, dominant agency, diligent agency, independent agency, and self-assured agency. *N* = 946. Unstandardized betas.

^a Men = 0, Women = 1.

* *p* < .05. ** *p* < .01. *** *p* < .001.

agency for both male and female supervisors were significantly above four or neutrality or midpoint of the scale. Nevertheless, of the most critical importance for our research is the significant interaction effects we found, which suggest that the link between displaying different types of agency and leadership outcomes varied by supervisor gender.

Finally, many gender and leadership researchers currently use gender stereotype and masculinity scales, such as Bem's Sex Role Inventory and the Personal Attributes Questionnaire, to measure perceptions of agency (Ahrens & O'Brien, 1996), even though gender stereotypes and agency have nonoverlapping content (e.g., athleticism is stereotypically associated with men and thus considered masculine but is not used to measure agency; Eagly et al., 2020; Prentice & Carranza, 2002). We show that agency can be distinguished from existing perceived masculinity measures and also possess incremental validity in relation to these scales, and thus researchers might consider using the CADDIS measure instead of perceived masculinity scales to assess agency.

Study 5

Study 5 built on Studies 3 and 4 by providing converging evidence for agentic advantage and disadvantage. In this study, we explicitly manipulated two types of agency—independent (representing agentic advantage) and dominant agency (representing agentic disadvantage)—and their respective magnitude (low vs. high).

To test Hypotheses 3 and 5, we employed the critical incident technique (Flanagan, 1954) and requested participants to recall and write about a time when their supervisor behaved in a way

that was either high or low in independent or dominant agency. Participants were subsequently asked to evaluate their supervisor on leadership and report their supervisor's gender. Therefore, this study employed a between-subjects study manipulating agency type (independent vs. dominant agency), manipulating agency magnitude (low vs. high), and measuring supervisor gender. Per Hypothesis 3, we predicted that the effect of demonstrating high independent agency on increased leadership promotability evaluations would be stronger for women. Per Hypothesis 5, we predict that the effect of demonstrating high dominant agency on decreased leadership promotability evaluations would be stronger for women.

Method

Participants and Procedure

We aimed to collect data from 1,000 U.S. participants with full- and/or part-time employment on Prolific Academic who had a supervisor at work. We received responses from 1,007 participants. We excluded six participants who experienced technical problems. We also excluded 12 participants who wrote that they could not recall a time when their supervisor displayed or lacked the agentic quality we described. List-wise deletion was conducted for the participant with a supervisor who had nonbinary gender. The final sample consisted of 988 participants (597 women, 379 men, 12 other; $M_{\text{age}} = 34.16$, $SD_{\text{age}} = 10.26$). Of these participants, 699 self-identified as White, 72 as Latinx, 37 as Black, 116 as Asian, 51 as biracial, 13 other races. Participants had an average work experience

of 12.54 years ($SD = 9.15$) and an organizational tenure of 4.70 years ($SD = 4.43$).

In total, 610 male and 378 female supervisors were evaluated. Of the supervisors, 784 were White, 67 were Black, 46 were Latinx, 55 were Asian, 26 were biracial, and 10 were of other races. Participants interacted with their supervisors 12.35 hr per week and worked with their supervisors they evaluated for 3.50 years ($SD = 3.16$). They held jobs from a wide range of industries, such as “health care and social assistance” (13.56%), “education services” (12.75%), and “information” (11.54%) and had job titles such as “sales associate,” “accountant,” and “customer service representative” (full list available upon request). Their supervisors had corresponding job titles such as “general manager,” “financial controller,” and “manager.”

All participants were told that they would be asked to evaluate their supervisor in this survey. They were first asked to provide the first name, initials, or nickname of their supervisor in a textbox. Then, participants were randomly assigned to one of four experimental conditions. Depending on the experimental condition they were assigned to, participants then read the following:

Please think of a time when your direct supervisor [Supervisor First Name] (did not behave vs. behaved) in a (*dominant and aggressive vs. independent and self-directed*) way.

In the box provided below, please write about a specific time when you thought that your direct supervisor (did not act vs. acted) in a way that was (*overly controlling and forceful vs. independent and self-reliant*) (provide at least three sentences).

In your response, first provide a brief description of the event. Then, try to include the answers to the following questions in your response.

- What did he or she do?
- What were your thoughts and how did you feel?

Please try to recreate the experience as fully as you can so that someone reading it would be able to understand exactly how the supervisor behaved and what you thought and how you felt at that time.

After completing the writing task,⁴ all participants were then asked to respond to the same three-item promotability measure used in Study 4 ($\alpha = .97$). As manipulation checks, all participants were asked to complete the dominant ($\alpha = .93$) and independent ($\alpha = .91$) agency subscales. Participants then reported sociodemographic information about their supervisors as well as themselves. Finally, while we did not include covariates in Study 5 as it was an experiment and thus less susceptible to omitted variable biases (Shen & Joseph, 2020), these findings held after controlling for the same covariates used in Study 4. Observed ranges for all manipulation check and perceived promotability items were 1–7.

Results

Means, standard deviations, and correlations among variables are found in Table 9.

Manipulation Check

We found that the agency magnitude manipulation was successful. A one-way analysis of variance (ANOVA) indicated that within the independent agency experimental condition, perceived independent agency was significantly higher in the high agency condition,

($M_{low} = 4.62$, $SD_{low} = 1.69$ vs. $M_{high} = 5.55$, $SD_{high} = 1.30$), $F(1, 478) = 45.22$, $p < .001$, $\eta^2 = .09$. Within the dominant agency experimental condition, perceived dominant agency was significantly higher in the high agency condition, ($M_{low} = 2.97$, $SD_{low} = 1.68$ vs. $M_{high} = 4.20$, $SD_{high} = 1.73$), $F(1, 502) = 65.17$, $p < .001$, $\eta^2 = .12$.

Further, within the independent agency experimental condition, perceptions of dominant agency did not significantly differ across the high agency condition, ($M_{low} = 3.41$, $SD_{low} = 1.74$, vs. $M_{high} = 3.32$, $SD_{high} = 1.75$), $F(1, 478) = .32$, $p = .571$, $\eta^2 = .01$. Within the dominant agency experimental condition, perceptions of independent agency also did not significantly differ across the high agency condition, ($M_{low} = 5.32$, $SD_{low} = 1.47$, vs. $M_{high} = 5.35$, $SD_{high} = 1.31$), $F(1, 500) = 0.05$, $p = .823$, $\eta^2 = .01$. These findings suggest that the agency type manipulation was successful and manipulated only one type of agency.

Leadership Promotability

A significant three-way ANOVA predicting leadership promotability emerged, $F(1, 980) = 10.40$, $p = .001$, $\eta^2 = .01$ (Figure 2), suggesting that the two-way interaction between supervisor gender and agency magnitude varied significantly across agency type, and offering support for our prediction that the two types of agency elicited varied reactions. Next, to test Hypotheses 3 and 5, we decomposed this significant three-way interaction and examined the Two-way magnitude \times Supervisor gender interactions for dominant and independent agency, respectively.

First, to test whether dominant agency elicited agentic disadvantage (H3), we examined the simple effect of agency magnitude for dominant male and female supervisors. Supporting Hypothesis 3, the effect of dominant agency magnitude on promotability was significant for women, ($M_{low, women} = 4.86$, $SD_{low, women} = 1.80$, vs. $M_{high, women} = 3.63$, $SD_{high, women} = 2.05$), $F(1, 980) = 21.40$, $p < .001$, but not for men ($M_{low, men} = 4.82$, $SD_{low, men} = 1.92$, vs. $M_{high, men} = 4.46$, $SD_{high, men} = 1.82$), $F(1, 980) = 2.95$, $p = .086$. Importantly, the two-way interaction between agency magnitude and supervisor gender for dominant agency was significant, suggesting that women experienced a larger penalty in leadership promotability when they were perceived to demonstrate high dominant agency, $F(1, 980) = 6.46$, $p = .011$.

To test whether independent agency elicited agentic advantage (H5), we examined the simple effect of agency magnitude for independent male and female supervisors. Supporting Hypothesis 5, the effect of independent agency magnitude on promotability was significant for women, ($M_{low, women} = 3.67$, $SD_{low, women} = 1.95$ vs. $M_{high, women} = 5.19$, $SD_{high, women} = 1.68$), $F(1, 980) = 30.59$, $p < .001$, as well as for men ($M_{low, men} = 4.19$, $SD_{low, men} = 1.81$ vs. $M_{high, men} = 5.01$, $SD_{high, men} = 1.78$), $F(1, 980) = 14.63$, $p < .001$. Importantly, the two-way interaction between agency magnitude and supervisor gender for independent agency was significant, suggesting that women enjoyed a greater boost in leadership evaluations when they were perceived to demonstrate high independent agency, $F(1, 980) = 4.11$, $p = .043$.

Participant's gender did not significantly moderate the three-way interaction between agency type, agency magnitude, and leader

⁴ Please see the online supplement for examples that participants provided in the low independent and dominant agency conditions.

Table 9
Intercorrelations, Reliabilities, Means, and Standard Deviations Among Variables (Study 5)

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Leader promotability	4.51	1.92	(0.97)												
2. Agency type (1 = dominant, 0 = independent)	0.51	0.50	-0.02	—											
3. Magnitude condition (1 = high, 0 = low)	0.50	0.50	0.04	-0.02	—										
4. Subordinate's job level ^a	0.67	0.81	0.05	-0.06*	0.03	—									
5. Supervisor's job level ^a	1.70	0.79	0.01	-0.03	0.03	0.57***	—								
6. Percentage of men in company	51.87	20.50	0.09**	-0.03	0.13***	0.10**	—								
7. Percentage of men in senior management	61.53	24.53	0.04	-0.01	0.01	-0.01	0.60***	—							
8. Percentage of women in industry	51.10	16.93	-0.07*	0.01	-0.04	-0.11***	-0.47***	-0.27***	—						
9. Subordinate's age	34.16	10.25	0.04	-0.01	0.01	0.26***	0.17***	-0.04	-0.01	—					
10. Subordinate's gender (0 = Man, 1 = Woman)	0.39	0.49	-0.06	0.02	-0.05	-0.20***	-0.05	-0.15***	0.19***	-0.01	—				
11. Supervisor's gender (0 = Man, 1 = Woman)	0.38	0.49	-0.08*	0.02	0.02	-0.18***	-0.09**	-0.35***	0.23***	0.41***	—				
12. Supervisor race (1 = White, 0 = Non-White)	0.79	0.40	0.07*	-0.04	0.01	0.12***	0.06	0.03	-0.04	0.19***	-0.07*	—			
13. Subordinate race (1 = White, 0 = Non-White)	0.71	0.46	0.01	-0.01	-0.05	0.08*	0.07*	-0.01	-0.03	0.29***	0.03	-0.09**	—		
													-0.01	0.27***	—

Note. N = 988. Values in parentheses are Cronbach's alpha.

^a Job level was coded as 0 = non-managerial employee, 1 = first-level manager, 2 = mid-level manager, 3 = top-level manager.

* $p < .05$. ** $p < .01$. *** $p < .001$.

gender. We also probed this four-way interaction and did not find significant three-way Participant gender × Agency magnitude × Leader gender within the independent and dominant agency experimental condition (see online Supplemental).

Discussion

By manipulating agency type and magnitude, Study 5 provided causal evidence for our hypotheses, as we found that agentic advantage was elicited by independent agency, and an agentic disadvantage was elicited by dominant agency. These findings not only provide support for our predictions, but also replicate previous findings on agentic advantage (Schauberg & Flynn, 2017) as well as agentic disadvantage (Rudman et al., 2012).

General Discussion

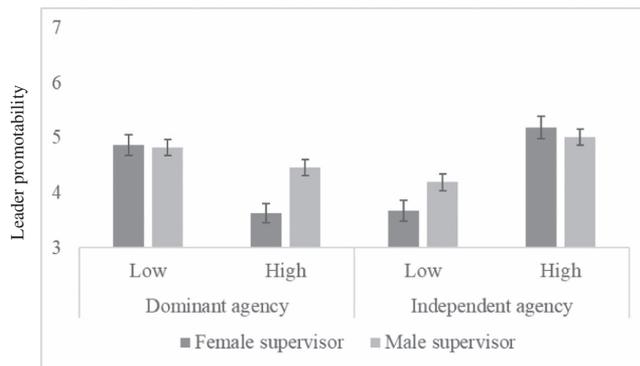
In this paper, we tested the idea that agentic advantage and disadvantage occurred due to violations of different types of agency-based gender stereotypes. Utilizing a six-factor measure of agency that was developed based on a review of gender and leadership research in the past 4 decades, we theoretically and empirically reconcile paradoxes about agentic advantage and disadvantage and also offer a fresh perspective on agentic-based biases. We found that demonstrating competence, independence, and diligence was more strongly linked to more favorable leadership promotability evaluations for women, whereas displays of dominance were more strongly linked to reduced leadership promotability perceptions for women.

Theoretical Implications

Our work contributes to gender and leadership research in several ways. First, the gender double bind, an idea that is both commonly evoked in academia (Carli & Eagly, 2011; Rudman et al., 2012) as well as the popular press (Catalyst, 2018; Vedantam, 2016), describes a Catch-22 that women experience when expressing agency. While not displaying agency leads women to be seen as lacking in requisite qualities needed for leadership, displaying agency leads to backlash and discrimination (Rudman et al., 2012). Drawing on existing analyses of gender stereotype content, we challenge the notion of the double bind by casting doubt on the presumption that stereotypic expectations associated with women and leaders are necessarily in conflict. In fact, we show that women who demonstrated desirable agentic qualities can not only escape the punishment suggested by past research, but that they can be evaluated favorably when demonstrating competence, diligence, and independence.

Further, by integrating research on gender stereotype content and expectancy violation theory, we provide a conceptual framework that systematically organizes the study of women and agency and clarifies our understanding of seemingly contradictory findings in the literature that have been largely based on an undifferentiated view of agentic qualities. We propose that leadership challenges arise for women—as classic research in the literature has documented (Eagly & Karau, 2002; Heilman & Okimoto, 2007; Rudman et al., 2012)—when women are perceived to violate expectations associated with proscribed agency stereotypes, but that leadership opportunities are also present for women—as a handful of recent

Figure 2
Agentic Advantage and Disadvantage (Study 5)



Note. Error bars represent standard errors.

studies have shown (Lanaj & Hollenbeck, 2015; Rosette & Tost, 2010; Schaumberg & Flynn, 2017)—when women are perceived to violate prescribed agency stereotypes.

Our work also expands the explanatory power of expectancy violation theory in understanding gendered evaluations. Although we are not the first to evoke positive expectancy violation theory to examine the evaluation of female leaders (Lanaj & Hollenbeck, 2015; Schaumberg & Flynn, 2017), by integrating it with research on gender stereotype content, we are able to provide an overarching framework to understand why, when, and in which direction, expectancy violations are likely to occur. For example, our theoretical framework helps to unify past negative and positive expectancy violations findings—such as self-reliance (Schaumberg & Flynn, 2017) and competence (Rosette & Tost, 2010)—with our own findings on diligent agency, by showing that positive expectancy violation occurs because these are weakly prescribed agentic stereotypes for women.

By developing a multifactor conceptualization of agency, we provide a common yardstick for future hypothesis testing in gender and leadership research. We demonstrate the superiority of a multifactor conceptualization of agency over alternative models by showing that agency factors are not only distinguishable psychometrically, more importantly, agency factors also appear to have distinct predictive effects in the context of agentic biases. Thus, our conceptualization of agency and the corresponding scale has the potential to allow gender and leadership researchers to study perceptual gender biases with greater theoretical precision. We hope that this distinction helps scholars and managers to better pinpoint the source of gender bias that women encounter as they try to ascend the corporate ladder, and thus design better interventions to alleviate existing biases.

Finally, our theoretical integration of research on gender stereotype content with expectancy violation theory provides opportunities for future research. For example, like past research (Lanaj & Hollenbeck, 2015; Schaumberg & Flynn, 2017), we focus on the consequences of expectancy violation for agentic content and the experiences of women. However, our theoretical reasoning could also be applied to the violations of gender communality stereotypes and the experiences of men. For example, a communality advantage may occur when men violate weak communal prescriptions by

enacting organizational citizenship behaviors (Allen, 2006). Likewise, a communality disadvantage may occur when men violate strong communality proscriptions when they appear weak within the context of help-seeking (Rosette et al., 2015). Therefore, we highlight the theoretical importance of using expectancy violation theory to explain a variety of different outcomes in gender bias research.

Practical Implications

Our work empowers women by suggesting that women can take charge. Indeed, while the idea of the gender double bind raises awareness about the challenges that women grapple with as they climb the corporate ladder, it does not offer a concrete prescription for helping women manage these biases and may even deter women from taking charge due to the fear of being disliked and discriminated.

That said, while these findings suggest that there are ways that women can be empowered to take charge, it is important that organizations and society do not put the burden of mitigating gender inequity on women because there still exist numerous institutional and organizational barriers and sources of gender discrimination (Kim et al., 2018; Pincus, 1996). Therefore, organizations should continue to combat biases in terms of how men and women are seen at work. For example, in addition to training programs that help equip women with greater independent, competent, and diligent agency (e.g., Lean In circles), managers can also help to reframe certain behaviors (e.g., providing direct and honest feedback, Rudman et al., 2012) as indicative of competent agency instead of dominant agency in order to help women harness agentic advantage and avoid agentic disadvantage. Finally, managers should ensure that the workplace is not a site for a “masculine contest” in which employees feel the need to prove their “masculinity” by aggressively competing with others. In these cultures, communal behaviors are often devalued, and women also receive greater backlash when they act in assertive ways because they are expected to let others take the lead (Berdahl et al., 2018).

Strengths, Limitations, and Future Research

Our work has notable strengths, including an overarching theoretical framework for understanding agentic advantage and disadvantage, a comprehensive literature review to develop a multidimensional scale reflective of the varied ways that agency has been operationalized by 4 decades of gender and leadership research, and an empirical reconciliation of agentic advantage and disadvantage using our newly developed agency scale which we then tested in three studies. However, the present research also has limitations, many of which provide fruitful areas for future research.

It may be difficult to reconcile the agentic advantage findings with the fact that women continue to be underrepresented in leadership positions. We think that there are several reasons for this discrepancy. First, male leaders did not appear to be reliably penalized for exhibiting greater dominant agency across Studies 4 and 5. This mixed finding is consistent with past research showing that compared to men who did not violate agentic proscriptions, men who did so experienced either a small but statistically significant penalty (Schaumberg & Flynn, 2017) or were not significantly penalized (Rudman et al., 2012). Further, across Studies 4 and 5, men were also evaluated as more promotable than comparable women at lower

levels of independent, competent, and diligent agency (see online Supplemental). One possibility is that men have more behavioral freedom at the workplace (Carli, 1990, 1998) and thus they may be punished less for exhibiting undesirable qualities or lacking desirable ones (e.g., being dominant, being incompetent). The greater willingness to promote men compared to women even as they display socially undesirable qualities or lack socially desirable ones (e.g., being dominant, lacking in competence) might also contribute to the underrepresentation of female leaders.

Further, we found that highly independent female leaders were evaluated more favorably than men in Study 4, and we did not find that women were evaluated more favorably than men at higher levels of competent and diligent agency in both Studies 4 and 5 (see online Supplemental). The more consistent finding was that, relative to men, women received a larger boost in perceived promotability as they demonstrated higher levels of competence, independence, and diligence. This lack of a clear consistent gender difference at higher levels of agency is consistent with previous research demonstrating agentic advantage (Study 1, Schauberg & Flynn, 2017). Therefore, even though women clearly benefit to a greater degree than men as they demonstrate certain types of agency (resulting in a relative female advantage), the fact that we observed a trending but nonsignificant gender reversal in leadership promotability evaluations for competent and diligent agency may be another reason why women remain underrepresented in leadership positions. Indeed, because “bad is stronger than good” (Baumeister et al., 2001), it is possible that positive expectancy violations effects might generally be weaker than negative expectancy violations, leading women to be penalized more for displaying agentic proscriptions, but not rewarded to the same extent for demonstrating agentic prescriptions.

We also focused on gender differences in subjective performance evaluations (i.e., perceived leadership promotability) as opposed to objective rewards (e.g., salary increase). Joshi et al. (2015) found that gender differences in subjective performance evaluations were 14 times smaller than gender differences in organizational rewards. Therefore, one possibility is that even though women may be evaluated similarly or even more favorably than men in terms of their subjective evaluations, they are rewarded at a much lower rate than men in terms of objective monetary compensation. Future research should investigate this possibility.

Further, our work has focused largely on positive outcomes (i.e., perceptions of leadership promotability). Future research can examine the possibility that the underrepresentation of women in top leadership positions might be additionally explained by the fact that although displays of agentic behavior can yield benefits, it can also come with certain costs, such as being sexually harassed or sabotaged by others (Berdahl, 2007; Rudman et al., 2012).

While our measure of agency primarily focuses on interpersonal perceptions, future research could examine the generalizability of the six-factor conceptualization of agency to self-perceptions. Doing so could reveal additional person-centered explanations for underrepresentation of women leaders. For instance, Gino et al. (2015) found that women viewed professional advancement as equally attainable, but less desirable, compared to men. These findings imply that people not only distinguish between different types of agency within the context of self-perceptions (i.e., women see themselves as equally *competent* compared to men in terms of being able to attain top leadership positions, but they lacked the *ambition* to pursue these positions), the findings also suggest that

differences in how women view their own agency has implications for whether they then pursue leadership positions.

Like the majority of studies included in our literature review, we adopted a trait-based approach of measuring agency. One limitation of a trait-based approach is that it is more vulnerable to critiques about whether women and men are judged differently for the same behaviors (Prentice & Carranza, 2002). For example, women might have to demonstrate more competent behaviors in order to be perceived as equally competent as men (Foschi, 2000). Similarly, there might be gender differences in the extent to which various behaviors are perceived as dominant—giving honest feedback might be more likely to be encoded as competent agency for men, but dominant agency for women (Williams & Tiedens, 2016). Therefore, one possibility is that more behaviors may be encoded as dominance for women compared to men, leading agentic disadvantage to occur more frequently for women in real-world contexts. As our scale was developed based on past research and the majority of past research on women and agency have used a trait approach to measuring agency, our scale reflects this shortcoming. Future research should consider providing converging evidence by showing how a behavioral approach of measuring agency (e.g., giving honest feedback, Scott & Brown, 2006) can also elicit agentic advantage and disadvantage.

Also, certain items capturing our dominant agency factor have negative connotations (e.g., manipulative, controlling), while items used to measure factors that elicited agentic advantage (e.g., masterful, capable) appear to have positive connotations. While reflective of how these items have been operationalized in past gender and leadership research, the differences in item valence might have contributed to the agentic disadvantage and advantage findings we found here. Therefore, it may be worthwhile for future research to strive to replicate our findings using a set of agency items that do not have overt positive and negative connotations.

Further, there could be contextual moderators of the agentic advantage and disadvantage effect, such as diversity climate (McKay et al., 2008) or the presence of work–life practices and initiatives (Kelly et al., 2008). Agentic-advantage effects may be emphasized and agentic disadvantage may be attenuated in an organizational culture that values diversity and/or one that employs work–life practices as these cultures generally allow for better social integration of underrepresented employees. In a culture that appreciates and affirms the efforts and contributions of women and makes it possible for them to bring their whole selves to work via the work–life practices and initiatives, there may be a stronger tendency to recognize women for their contributions and foster agentic advantage.

Consistent with social cognitive theories of the leadership categorization process (e.g., Epitropaki & Martin, 2004, 2005), in Studies 4 and 5, we recruited subordinates and asked them to indicate perceptions of their supervisor’s agency. Our decision was guided by the fact that subordinates tend to be on the receiving end of their supervisor’s influence, and thus they may have intimate knowledge of how dominant or competent their supervisors tend to be. However, subordinates often do not have the authority to determine targets’ promotability. While Study 3 mitigates this limitation by assessing a lay observer’s perspective, future research should aim to provide converging evidence with supervisors’ evaluations of targets’ agency and promotability.

Our research did not focus on the variations that occur within categories of women. Women vary in social categories such as race, religion, and sexual orientation, and it is possible that these categories can intersect with gender to affect agency perceptions (Rosette et al., 2016, 2018). For example, because Black women are often stereotyped as dominant and overbearing (Childs, 2005; Pratt, 2012), they might not elicit a negative expectancy violation when demonstrating dominance, and subsequently they are able to escape agentic penalties (Livingston et al., 2012). Unfortunately, we were unable to empirically test three-way interactions between supervisor's race, gender, and agency type. For instance, Study 4 had unbalanced cell sizes when race was considered as a factor (e.g., only 34 out of 954 supervisors were Black female leaders in Study 4). Nevertheless, future research could further examine the intersectional effects of agency.

The paradox of agentic advantage and disadvantage may not only have been driven by differences in measurement of agency but also changes in time and history. With increased representation of women at work and the advent of social movements like #MeToo and #LeanIn, views of women continue to evolve (Duehr & Bono, 2006; Eagly et al., 2020). For instance, insofar as stereotype content may be shaped by gender differences in the distribution of men and women in different occupational roles (Eagly & Steffen, 1986; Fiske et al., 2002; Hoffman & Hurst, 1990), increased representation of women at work and in top leadership positions may contribute to a corresponding rise in perceptions of women's agency over time (Duehr & Bono, 2006; Eagly et al., 2020). Although an explicit consideration of time is beyond the scope of our current research, it could provide an interesting direction for future research.

Future research could also examine the generalizability of the CADDIS measure within the context of group-level perceptions. For example, the Stereotype Content Model (SCM; Fiske et al., 2002) argues that social groups are perceived along the dimensions of warmth (akin to communality) and competence (akin to agency, Abele, Cuddy, et al., 2008), and that racial hierarchies are in part maintained on the basis of warmth and competence judgments. We suggest that a more nuanced conceptualization of competence in the SCM model may provide a better understanding of various social group stereotypes. For instance, the competence dimension in the SCM has been measured using different subtype of agency factors, such as self-assuredness, independence, and competence. Just as different subscales of agency operate differently for gendered evaluation, it is possible that subscales of competence in SCM may operate differently for the evaluation of different social groups. For example, it is possible that Asian Americans are rated high on competence but low on dominance. Our CADDIS measure could provide a basis for these examinations.

While nested chi-square tests suggest that the second-order one factor model attained significantly less desirable fit compared to the correlated six first-order factor model, other fit indices (e.g., CFI, TLI) suggest that the one factor model attained desirable fit (e.g., CFI of .93 in Study 4). According to the bandwidth-fidelity dilemma (Ones & Viswesvaran, 1996), perhaps the desirability of the six- (vs. one-) factor model may depend on the criterion variable under question. While it may be preferable to use a six-factor model due to the varied predictive impact of the agency factors within the context of gender and leadership, future research should examine conditions under which the one-factor model may perform as well as its six-factor counterpart.

Finally, future research could examine the content and structure of communality. Doing so can help us better understand the theoretical connections between agency and communality and how these linkages inform gender and leadership issues. For example, dominant women may experience backlash specifically because they are seen as lacking in warmth as opposed to morality, which are two different aspects of communality (Abele et al., 2016; Goodwin, 2015).

Conclusion

In seeking to reconcile the paradox of agentic advantage and disadvantage, we suggest that women's path to leadership is characterized by both obstacles and opportunities. By illuminating some of the ways that agentic women can create favorable impressions, we hope that our research can help unleash women's potential to lead and thrive at work.

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Appendix A

Existing Conceptualizations of Agency (Chronological)

Study	Prior definitions	Research type	Agentic content assessed ^d	Agentic structure
Bakan (1966)	“Agency manifests itself in self-protection, self-assertion, and self-expansion; . . . Agency manifests itself in the formation of separations. . . . Agency manifests itself in isolation, alienation, and aloneness. . . . Agency manifests itself in the urge to master” (pp. 14–15)	Qualitative	NA	One factor
White (1979) ^b	Agency as the “capabilities the self has which reflect a forceful active self, reaching out, attempting to achieve a goal, but not necessarily in competition. There is a sense of striving with the self as agent (‘determined’), and working to bring results (‘industrious’). They may also indicate qualities the self has, effectances which are characteristic of the individual self (‘independent’; ‘decisive’). These are self-competencies—the self acting alone with no compelling sense of others being involved in the activity” (p. 300)	Quantitative	Ambitious, adventurous, curious, persevering, clear thinking, determined, individualistic, industrious, energetic, independent, intelligent, outspoken, assertive, self-confident, calm, active, capable, forceful, courageous, efficient, enterprising, rational, initiative, organized, sharp-witted	One factor used to conceptualize agency
Eagly & Steffen (1984)	“agentic qualities are manifested by self-assertion, self-expansion, and the urge to master” (p. 736)	Quantitative	Perceived agency was measured with items selected primarily from the masculinity-instrumentality subscale of the Personal Attributes Questionnaire. These items are: Active, not easily influenced, aggressive, independent, dominant, self-confident, competitive, makes decisions easily, never gives up easily. The item “stands up well under pressure” was also included in all experiments except Experiment 1.	One factor
Helgeson (1994)	“Agency reflects one’s existence as an individual. . . . Agency includes self-protection, self-assertion, self-expansion, self-control, and self-direction and emphasizes the forming of separations” (p. 414)	Qualitative	NA	One factor
McAdams et al. (1996)	“Agency encompasses a wide range of motivational ideas, including the concepts of strength, power, expansion, mastery, control, dominance, achievement, autonomy, separation, and independence” (p. 346)	Qualitative	Four broad themes: Self-mastery, status, achievement/responsibility, empowerment (p. 345)	Four factors
Rudman & Glick (2001) ^c	“Self-perceptions of women’s agency have occurred mainly for specific traits (e.g., self-reliant, individualistic, and ambitious) that can be characterized as	Quantitative	Agentic applicant’s essay was manipulated with “a stereotypically masculine, competitive orientation (e.g., ‘Basically there are two kinds of	One factor

(Appendices continue)

Appendix A (continued)

Study	Prior definitions	Research type	Agentic content assessed ^a	Agentic structure
	reflecting agentic competence. By contrast, women continue to rate themselves as lower than men on the agentic traits of competitiveness, decisiveness, aggressiveness, and forcefulness, which can be characterized as reflecting social dominance” (p. 745)		people, winners and losers. My goal is to be a winner, the type of person who gets to be in charge and make the decisions.’)” (p. 750)	
Twenge (2001)	“We have argued that agency contains two components—competence and dominance” (p. 746)	Quantitative	Gender stereotype IAT as well as gender stereotype index were measured with six agentic meaning words: independent, competitive, autonomous, individualistic, hierarchical, and self-sufficient	One factor
	“Other theories have treated assertiveness as part of agency (Bakan, 1966), a set of personality traits including elements of dominance, independence, leadership, and control” (p. 134)			
Eagly & Karau (2002)	“agentic characteristics, which are ascribed more strongly to men, describe primarily an assertive, controlling, and confident tendency—for example, aggressive, ambitious, dominant, forceful, independent, self-sufficient, self-confident, and prone to act as a leader” (p. 574)	Qualitative	NA	One factor
Duehr & Bono (2006)	“Agentic characteristics describe a more assertive, dominant, and confident tendency, including attributes such as aggressive, ambitious, independent, and self-confident. Agentic characteristics have traditionally been aligned with leadership roles” (p. 816)	Quantitative	Agentic characteristics were measured by: aggressive, ambitious, analytical ability, assertive, dominant, forceful, self-confident	One factor
Scott & Brown (2006)	“The male agentic/instrumental stereotype reflects a self-interested, task focused orientation in which men are believed to strive to master, dominate, and control the self and the environment. In line with this position, men are stereotypically believed to be independent, ambitious, competent, and competitive as well as motivated by stronger needs for dominance, autonomy, aggression, achievement, and endurance. . . . In the current paper we utilize the labels agentic and communal to reflect male and female stereotypical characteristics, respectively” (p. 232)	Quantitative	<i>Study 1:</i> 12 behavioral items were used to describe 6 agentic qualities. The agency qualities were: Dedicated, charismatic, intelligent, determined, aggressive, and competitive. The 12 agentic behavior items that corresponded to these agentic qualities were: “Worked late all week in order to finish the project; works on projects outside of working hours; when speaking, motivates employees; talks enthusiastically to the employees about what needs to be accomplished; displays extraordinary talent and competence in every project; consistently contributes good ideas during group discussions; does not give up on a project when complications arise; works relentlessly to solve difficult problems; argues until coworkers see the ideas; fights to get the work group necessary resources; emphasizes that the team needs to be number one; wants own ideas to be heard before other employees’ ideas are heard.” <i>Study 2a:</i> Agentic traits were measured as ambitious, decisive, industrious <i>Study 2b:</i> Agentic traits were measured as decisive, dedicated, goal oriented	One factor
Heilman & Okimoto (2007)	“agentic behavior, behavior that demonstrates dominance, competitiveness, and achievement orientation, is generally considered out of bounds for women” (p. 81)	Quantitative	Perceived agenticism in all studies was measured using semantic differential scales consisting of the following items: strong–weak, assertive–not assertive, tough–not tough, bold–timid,	One factor

(Appendices continue)

Appendix A (continued)

Study	Prior definitions	Research type	Agentic content assessed ^d	Agentic structure
Hirokawa & Dohi (2007)	“Agency refers to concerns about self-affirmation and individualization, and it leads to a focus on self-protection and self-assertion by emphasizing separation” (p. 517)	Quantitative	active–passive, and dominant–submissive Agency was assessed using the Communion-Agency Scale, and comprised of items such as “I am proactive; I have a strong will and firm beliefs; once I decide, I take action; I have confidence in myself; I assert my opinion; I deal well with a difficulty” Unmitigated agency was measured with these items: “I take an aggressive attitude toward others; I have no patience for someone’s failures; I can’t tolerate incompetence; I make others comply with me; I don’t listen to other people’s opinions; I can’t accept an opinion that is different than mine”	Two factors that measure positive aspects of agency and negative aspects of agency (unmitigated agency)
Abele, Uchronski, et al. (2008)	“‘Agency’ refers to a person’s striving to be independent, to control one’s environment, and to assert, protect and expand one’s self. Agentic individuals are usually capable of high performance and are autonomous and individualistic; they like to lead and to dominate, are aspiring and strive to achieve their goals, even if they have to conquer obstacles. In an excessive fashion, agency shows up as a ‘hunger for power and superiority’ and can manifest itself in aggressive and rude behavior, alienation and rejection. A lack of ‘agency’ manifests itself in, for instance, inactivity and apathy. . . . We also provided examples for the different facets of agency (presence of agency: Inquiring, aggressive; lack of agency: Slow, aimless; has nothing to do with agency: Funny)” (p. 1204)	Quantitative	69 agentic and communion related words ^d	Two factors, consisting of qualities that express a lack of agency and positive adjectives that express a presence of agency
Conway et al. (2008)	“Agency is an instrumental, goal-directed orientation that encompasses traits such as forceful and dominant” (p. 739) “Unmitigated agency refers to negative stereotypically masculine tendencies including being arrogant and boastful” (p. 741)	Quantitative	Agency was measured using the Positive Masculinity subscale of the EPAQ. Unmitigated agency was measured by the Negative Masculinity subscale of the EPAQ.	Two factors: Mitigated agency and unmitigated agency
Wojciszke & Abele (2008)	“Agency/competence refers to task functioning and goal achievement . . . involves qualities like efficient, competent, active, persistent, and energetic (and their opposites)” (p. 1139)	Quantitative	<i>Study 1:</i> Raters were instructed to rate stories based on agency content. Agency was defined for the rater as the extent “this event show that the acting person is agency oriented, that is, that he/she is oriented toward doing things in an efficient way, or that he/she is not oriented toward action and its efficiency” (p. 1141) <i>Study 2:</i> Perceived agency was measured as active, innovative, open-minded, resourceful, self-dependent, and thinks prospectively	One factor
Ybarra et al. (2008)	“The second challenge, acquiring skills, talent, and status, is addressed through the agency dimension . . . which deals with characteristics and behavioral tendencies such as	Quantitative	<i>Study 1:</i> Raters classified cultural practices into categories. Agency category was defined as “practices enabling people to perform tasks, solve problems, and attain their goals. . . .	Two factors: Positive aspect of agency and negative aspect of agency

(Appendices continue)

Appendix A (continued)

Study	Prior definitions	Research type	Agentic content assessed ^a	Agentic structure
	intelligence, competence, and diligence" (p. 1084)		Examples of agency-related universals included: tools; tool dependency; mental maps; memory; practice to improve skills; critical learning periods" (p. 1085) <i>Study 2:</i> Positive characteristics of agency: astute, inventive, skillful, knowledgeable, talented, methodical, diligent, witty, attentive, purposeful Negative characteristics of agency: inept, hasty, sluggish, ignorant, irresponsible, lazy, mediocre, disorganized, idiotic, haphazard <i>Study 3:</i> Positive characteristics of agency was measured as: creative, intelligent, skillful Negative characteristics of agency was measured as: unimaginative, stupid, clumsy	
Madera, Hebl, & Martin (2009)	"Agency includes descriptions of aggressiveness, assertiveness, independence, and self-confidence. . . . Agentic behaviors at work include speaking assertively, influencing others, and initiating tasks" (p. 1592)	Quantitative	Agentic adjectives were measured with words like: assertive, confident, aggressive, ambitious, dominant, forceful, independent, daring, outspoken, intellectual Agentic orientation was measured using a computerized text analysis program which accounted for words that deal with cognitive processes, achievements, and actions. Psychologically, this index refers to how much a person is "referred to the applicants as active, dynamic, and achievers" (p. 1593). Examples of these words include: earn, gain, do, know, insight, and think.	One factor
Rosette & Tost (2010)	"Men, on the other hand, are expected to be more achievement oriented and thus are viewed as competent, aggressive, independent, decisive, and forceful. . . . These characteristics are labeled agentic" (p. 222)	Quantitative	Agentic characteristics was measured using the following items: confidence, skillfulness, competitiveness, power, and capability	One factor
Witt & Wood (2010)	"men, more than women, are agentic—that is, masterful, assertive, competitive, and dominant" (p. 635)	Quantitative	<i>Study 1:</i> Agentic attributes were measured with items from the BSRI and the measure included items such as defends beliefs, is independent, is reliable, has a strong personality, has leadership skills, and willing to take a stand <i>Study 2:</i> Agentic traits were measured using a single item: "To what extent is it important that you act in a dominant, powerful, or assertive manner?"	One factor
Abele & Bruckmüller (2011)	"Agency was defined as traits related to a person's striving to assert the self, to show competence, and to pursue goals; 'ambitious,' 'dominant,' and 'egoistic' were given as examples" (pp. 937–938)	Quantitative	Positive agency was measured using the following words: active, persistent, clever, resolute, industrious, competent, capable, self-confident, independent, determined, efficient, ambitious, consequent, self-reliant Negative agency was measured using the following words: undisciplined, dumb, simple-minded, passive, aimless, messy, lazy, insecure, aggressive, arrogant, chaotic, dominant, selfish, self-opinionated, presumptuous	Two factors, consisting of positive agency and negative agency
Hundhammer & Mussweiler (2012)	"Agency reflecting a priority concern for the self" (p. 177)	Quantitative	Agency was measured using the following items: decisive, assertive, confident, fearless, businesslike, daunting, resolute, willing to take risks	One factor

(Appendices continue)

Appendix A (continued)

Study	Prior definitions	Research type	Agentic content assessed ^d	Agentic structure
Rudman et al. (2012)	"In order to be perceived as qualified, they must defeat gender stereotypes by presenting themselves as competent, confident, and assertive (i.e., agentic)" (p. 165)	Quantitative	<i>Study 2:</i> Agency was manipulated in a vignette as "providing brutally honest feedback," and "commitment to maintaining high standards." Further, male agency prescriptions were measured with the following items: career-oriented, leadership ability, assertive, independent, business sense, ambitious, self-starter, intelligent, high self-esteem, and competitive <i>Study 3:</i> Agency was manipulated in a vignette. The agentic person "stressed their prior managerial success and their ability to initiate projects, lead a team, and work well under pressure" (p. 171) <i>Study 5:</i> To manipulate confederate's agency, participants completed a "leadership aptitude test" in the belief that confederates completed the test as well. Sample items in this test included, "When I am in charge of a group, things always go smoothly," and "I usually do not need deadlines and timetables to be productive." The sample items include, "When I am in charge of a group, things always go smoothly," and "I usually do not need deadlines and timetables to be productive" (p. 174). Participants in the agentic condition were told that the agentic confederate leaders scored 97th percentile on the test whereas participants themselves scored 77th percentile	One factor
Koenig et al. (2011)	"Agency or instrumentality represented . . . mainly by adjectives such as assertive and competitive" (p. 387)	Quantitative	<i>Studies 1a and 2:</i> Agency/competence was measured by boastful, arrogant, egotistical, competitive, aggressive, competent, intelligent and loaded onto one factor <i>Studies 1b and 3:</i> Agency/competence was measured by assertive, dominant, confident, aggressive, competent, intelligent and loaded on one factor <i>Study 4:</i> Agency was measured using items such as dominant, arrogant, boastful, egotistical, daring	One factor ^e
Rosette et al. (2016)	"Agentic content manifests itself as independent achievement, self-direction, and the pursuit of competence, proficiency, and control" (pp. 430–431)	Qualitative	NA	Two factors: agentic-competence and agentic-dominance

Note. This table is not an exhaustive representation of agency. EPAQ = Extended Personal Attributes Questionnaire; IAT = Implication Association Test; BSRI = Bem Sex Role Inventory.

^a By agentic content, we mean how agency was measured or manipulated in empirical papers, as well as how it was conceptualized in theoretical papers. ^b The author conceptualized agency as "agentic competencies" for a number of conceptual reasons that are discussed in detail in their article (see p. 299). For example, one reason was due to the author's desire to focus on the positive aspects of agency in terms of "gains," as opposed to the "negative, defeating, or conflicting" qualities that lead to pathology or neurotic tendencies (p. 299). This is also why unlike other scales that have been used as measures of agency, all the agency items in their scale are positive. ^c Although the authors conceptualize and define agency as comprising of two components (dominance and competence, see p. 746), their operationalization of agency had one factor. ^d Due to space constraints, we do not list the agency words here (please refer to Table 1 in their paper for a complete list of agency words). ^e For reasons they articulate in the paper, Koenig et al. (2011) consider competence as separate from agency. Although agency is referred to as agency/competence in some of their studies (e.g., Study 1a), they conceptualize agency as a uni-factor construct.

Appendix B
Summary of Agency Items and Reasons for Exclusion

No	Agency-related adjective	Included? (× = included)	Reasons for exclusion/Additional comments
1.	Achievement	×	
2.	Active	×	
3.	Acts as a leader	×	Subsumed as to aspire to be leader
4.	Adventurous		Observed thrice
5.	Aggressive/aggression	×	
6.	Ambitious/ambition	×	
7.	Analytical	×	
8.	Arrogant		Observed once
9.	Aspiration to lead rather than follow	×	
10.	Assertive	×	
11.	Athletic		Not commonly included in established conceptualizations and definitions of agency (see Appendix A)
12.	Autonomy	×	
13.	Be a leader	×	Subsumed as to “aspire to be leader”
14.	Boastful		Observed once
15.	Bold	×	
16.	Businesslike		Observed thrice
17.	Cannot tolerate different opinions		Observed once
18.	Cannot tolerate incompetence		Observed once
19.	Capability	×	
20.	Career seriousness/oriented		Observed thrice
21.	Charismatic	×	
22.	Command		Subsumed as “controlling”
23.	Competence/competent	×	
24.	Competing for attention		Observed once
25.	Competitive/competition	×	
26.	Confidence	×	
27.	Controlling	×	
28.	Courageous		Not commonly included in established conceptualizations and definitions of agency (see Appendix C)
29.	Cynical		Observed once
30.	Daring	×	Subsumed as to “bold”
31.	Daunting		Observed once
32.	Deal well with difficulty		Observed once
33.	Decisive	×	
34.	Dedicated	×	
35.	Defends beliefs	×	Subsumed as to “self-assured”
36.	Demonstrating skill	×	Subsumed as to “skillful”
37.	Determined	×	
38.	Dictatorial		Observed once
39.	Dominance/dominant	×	
40.	Do not listen to other’s opinions		Observed once
41.	Dynamic		Observed once
42.	Efficacy	×	
43.	Efficient		Observed twice
44.	Egotistical		Observed once
45.	Endurance		Observed once
46.	Fearless		Observed once
47.	Feelings not easily hurt		Observed once
48.	Feels superior	×	
49.	Financial rewards		Noun, not adjective
50.	Focus on the self	×	Subsumed as to “self-interested”
51.	Forceful	×	
52.	Goal oriented	×	
53.	Greedy		Observed once
54.	Hardworking	×	
55.	Has a strong personality		Observed twice
56.	Has leadership skills	×	Subsumed as to “aspire to be leader”
57.	Hedonism		Observed once
58.	Hostile		Observed once
59.	In control		Observed once
60.	Independence/independent	×	
61.	Indifferent to others		Observed once
62.	Individualistic	×	
63.	Industrious		Observed once
64.	Influencing others	×	

(Appendices continue)

Appendix B (continued)

No	Agency-related adjective	Included? (× = included)	Reasons for exclusion/Additional comments
65.	Initiating activity directed to assigned tasks		Observed once
66.	Intellectual/intelligent	×	
67.	Irresponsible (reverse)	×	Subsumed as to “responsible”
68.	Leadership	×	Subsumed as to “aspire to be leader”
69.	Leadership motivation	×	Subsumed as to “aspire to be leader”
70.	Likely to have leadership ability	×	Subsumed as to “aspire to be leader”
71.	Logical		Observed once
72.	Looks out only for self	×	Subsumed as to “self-interested”
73.	Makes decisions easily	×	Subsumed as to “decisive”
74.	Makes others comply	×	Subsumed as to “controlling”
75.	Making problem-focused suggestions		Observed once
76.	Manipulative	×	
77.	Masculine		We argue that agency is distinct from masculinity, so this item was not included
78.	Masterful/mastery	×	
79.	Motivated to succeed	×	Subsumed as to “successful”
80.	Never cry		Observed once
81.	Never gives up easily	×	Subsumed as to “dedicated”
82.	No patience for other’s failures		Observed once
83.	Not easily influenced		Observed twice
84.	Not excitable		Observed once
85.	Objective	×	
86.	Once I decide, I take action		Observed once
87.	Opinionated	×	
88.	Outspoken	×	
89.	Performance motivation		Observed once
90.	Power(ful)	×	
91.	Productive		Observed once
92.	Recognition	×	Subsumed as to “status-seeking”
93.	Reliable		Observed twice
94.	Resolute	×	Subsumed as “determined”
95.	Responsible	×	
96.	Risk taker		Not commonly included in established conceptualizations and definitions of agency (see Appendix C)
97.	Seek power	×	Subsumed as to “power-seeking”
98.	Seeking new experience or excitement		Observed twice
99.	Self-assured		
100.	Self-confident(ce)	×	Subsumed as “self-assured”
101.	Self-direction	×	
102.	Self-expansion		Observed once
103.	Self-improvement		Observed once
104.	Self-interested	×	
105.	Self-promotion	×	Subsumed as to “status-seeking”
106.	Self-reliant	×	
107.	Self-sufficiency	×	Subsumed as “self-reliance”
108.	Separation		Observed once
109.	Sincerity (reverse)	×	
110.	Skillful	×	
111.	Stands well as pressure	×	Subsumed as “tough”
112.	Status	×	
113.	Strong	×	
114.	Strong willed	×	Subsumed as “conviction”
115.	Success	×	
116.	Task-focused orientation	×	
117.	Tough	×	
118.	Trustworthy (reverse)	×	
119.	Uniqueness		Observed once
120.	Very little need for security		Observed once
121.	Willing to take a stand	×	
122.	Worldly		Observed once
123.	Curious		Observed once
124.	Persevering	×	Subsumed as “dedicated”
125.	Clear thinking		Observed once
126.	Energetic	×	Subsumed as to “active”
127.	Calm		Observed once
128.	Enterprising		Observed once
129.	Rational	×	Subsumed as “analytical”
130.	Initiative		Observed once

(Appendices continue)

Appendix B (continued)

No	Agency-related adjective	Included? (× = included)	Reasons for exclusion/Additional comments
131.	Organized		Observed once
132.	Sharp-witted	×	Subsumed as “intelligent”
133.	Hierarchical		Observed once
134.	Self-starter		Observed twice
135.	High self-esteem		Observed twice
136.	Persuasive		Observed once
137.	Able		Observed once
138.	Creative		Observed once
139.	High status		Observed once
140.	Wealthy		Observed once
141.	Insecure (reverse-coded)		Observed once
142.	Others acknowledge when I’m right		Observed once
143.	Get chance to voice views		Observed once
144.	Respect my privacy		Observed once
145.	Not back down when disagreements arise		Observed once
146.	Others not tell me what to do		Observed once
147.	Obedied when I am in authority		Observed once
148.	Others admit when they are wrong		Observed once

Appendix C**Managerial Evaluations**

Consider your current supervisor, or the most recent supervisor you had, and rate your agreement about whether he or she displays these traits and behaviors at the workplace. There are no right or wrong answers, so please answer each question as you see fit. Do not spend too much time on the questions, it is best to follow your first impression.

Use the following scale: 1: Strongly disagree 2: Moderately disagree 3: Slightly disagree 4: Neutral 5: Slightly agree 6: Moderately agree 7: Strongly agree

The questions below consist of adjectives or behaviors that may describe your supervisor. Following the adjective or behavior is a definition of the adjective or phrase. For example, if you see “achievement-oriented: Performance focused,” we mean that performance focused is the meaning of the word “achievement-oriented,” and we would like you to indicate to what extent your supervisor was “achievement-oriented” at the workplace.

1. *Status-seeking*: Reaching a higher standing relative to others
2. *Aspire to be leader*: A desire to move upward or higher than others
3. *Ambitious*: Strong desire to achieve something or get ahead of others
4. *Willing to take stand*
5. *Self-assured*: Having a firm belief in one’s abilities
6. *Self-efficacy*: Belief in one’s capabilities
7. *Conviction*: Possessing certainty or steadfast belief
8. *Independent*: Not relying on others
9. *Self-reliant*: Relying on oneself
10. *Individualistic*: Showing individuality in behavior and thoughts
11. *Self-direction*: Follows one’s own thought or action
12. *Aggressive*: Vigorously commanding over others
13. *Dominant*: Exerting authority over others
14. *Controlling*: Determining the behavior of others
15. *Forceful*: Characterized as vigorous strength
16. *Manipulative*: Affecting the behavior of others for one’s own purposes
17. *Active*: Characterized by energetic work
18. *Dedicated*: Wholly committed to an end
19. *Task oriented*: To focus on getting the job done
20. *Hardworking*: Working with diligence
21. *Competent*: Sufficiently qualified
22. *Capable*: Having ability to complete a task efficiently
23. *Intelligent*: Possessing sound knowledge
24. *Skillful (having skills)*: Possessing proficiency in relevant areas
25. *Masterful*: Possessing an in depth understanding of pertinent tasks

Note. None of the items are reverse scored.

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