

SELF-RELIANCE: A GENDER PERSPECTIVE ON ITS RELATIONSHIP TO COMMUNALITY AND LEADERSHIP EVALUATIONS

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We posit a female advantage in the relationship between self-reliance and leadership evaluations. We test this prediction in four studies. First, using multi-rater evaluations of young managers, we find that self-reliance relates positively to leadership evaluations for women, but not for men. Next, in each of three experiments, we manipulate the gender of a leader and the agentic trait he or she displays (e.g., self-reliance, dominance, no discrete agentic trait). We find that self-reliant female leaders are evaluated as better leaders than self-reliant male leaders are. In contrast, we find a male advantage or no gender advantage for dominant leaders or leaders who are described positively, but not in terms of any discrete agentic trait. Consistent with expectancy violation theory, the female advantage in the relationship between self-reliance and leadership evaluations emerges because self-reliant female leaders are seen as similarly competent, but more communal, than self-reliant male leaders are. We discuss the implications of these findings for understanding the effects of self-reliance, gender stereotypes, and stereotype violations on leadership evaluations.

What should leaders be like? Most people believe that leaders should be assertive, confident, dominant, and independent (Lord, Foti, & De Vader, 1984). Further, they believe these agentic traits align more closely with men than with women (Eagly & Karau, 2002; Johnson Murphy, Zewdie, & Reichard, 2008; Koenig, Eagly, Mitchell, & Ristikari, 2011). According to both extant theory and empirical research, the combination of these two beliefs—that leaders need to be agentic in order to be effective, and that men are more agentic than women—yields a male advantage in leadership evaluations. That is, people are predisposed to believe that men are more capable leaders than women (Eagly & Karau, 2002; Heilman, Wallen, Fuchs, & Tamkins, 2004; Ridgeway, 2001).

Given that agentic traits are critical to leadership evaluations, one might assume that agentic women

would be evaluated as well as men. However, according to role congruity theory (Eagly & Karau, 2002), this is unlikely to be the case because evidence of high agency in female leaders tends to elicit an assumption of low communality (Heilman & Okimoto, 2007). As a result, exhibiting agentic traits, such as assertiveness and dominance, advantages men over women in leadership evaluations because exhibiting agency undermines perceived communality for women more than men.

We challenge this aspect of role congruity theory by proposing that the negative effects of agency on evaluations of women's communality likely depend on the specific agentic traits that women display (see Rudman & Glick, 2001). Agency and communality represent two separate dimensions of human life (Bakan, 1966). Agency captures the drive for achievement and the promotion of one's own interests, and communality captures the drive for affiliation and the promotion of others' interests (Wojciszke, Abele, & Baryla, 2009). These two dimensions represent separate constellations of traits: agency consists of traits related to controlling the environment and asserting the self, and communality consists of traits related to cooperating and integrating the self with others (for full lists of these

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traits, see Abele & Wojciszke, 2007; Bem, 1974). Given the importance of both agency and communality in social life, Bakan (1966) argued that too much of either is costly, and thus it is best for personal and social outcomes when these two components are balanced. Indeed, people are most highly regarded when they are seen as both highly agentic and highly communal (Fiske, Cuddy, Glick, & Xu, 2002).

Viewing agentic traits in undifferentiated terms has been useful for mapping the intra- and interpersonal space in personality research (e.g., Fiske et al., 2002). At the same time, this view may misrepresent gender differences in the relationship between agency and leadership evaluations by masking variations among discrete agentic traits. For example, in previous research, the degree of backlash that women incurred for displaying agency depended, in part, on the specific agentic trait they displayed (Rudman & Glick, 2001). Whereas people responded more positively to men than to women who exhibited dominance (Rudman, Moss-Racusin, Phelan, & Nauts, 2012), they responded similarly to men and women who exhibited agency in more competence-based terms (Rudman & Glick, 2001). We push this idea further to suggest that displays of certain agentic traits can reverse the male advantage in leadership evaluations. Specifically, we draw on expectancy violation theory to propose that when agency is expressed as self-reliance, a *female* advantage in leadership evaluations emerges.

By identifying a female advantage in the relationship between self-reliance and leadership evaluations, we offer a novel perspective on how gender stereotypes influence evaluations of female leaders. We first describe self-reliance and its potential effect on leadership evaluations. Next, we highlight conflicting predictions regarding whether agentic and communal stereotypes help or hurt male and female leaders. We then draw on expectancy violation theory and distinctions between prescriptive and proscriptive gender stereotypes both to reconcile these conflicting predictions and to explain the benefits of self-reliance for women's leadership evaluations. In doing so, we outline a new direction for future theory and research on gender stereotypes, personality traits, and leadership evaluations.

THEORY AND HYPOTHESIS DEVELOPMENT

Self-Reliance

Self-reliance is commonly defined as the capacity to rely on oneself or one's own capabilities to meet

one's personal needs. Agreement with statements such as "I depend on myself, not on others, to get what I want done" and disagreement with statements such as "Someone often has to tell me what to do" indicate a high level of self-reliance (Hmel & Pincus, 2002; Steinberg & Silverberg, 1986; Triandis & Gelfand, 1998). As a scholarly construct, self-reliance emerged in the 19th century in transcendentalist writings of the time, most notably Ralph Waldo Emerson's (1841/1993) eponymous essay. Today, the concept emerges prominently in cross-cultural and developmental psychology because self-reliance is seen as a distinguishing marker of individualistic societies, and its development is regarded as necessary for a successful transition to adulthood (e.g., Blos, 1979, Hirschfeld et al., 1977; Steinberg, 1989; Triandis & Gelfand, 1998). In comparison, self-reliance has been absent from trait theories of leadership, despite being featured heavily in historical narratives of political leaders and lionized heroes of the American West (e.g., Hofstadter & Lasch, 1989; Kalberg, 2015; Riley & Etulain, 1997; Turner, 1986). In our aim to connect self-reliance to trait theories of leadership, we draw partly from some aspects of autonomy and individualism that overlap directly with self-reliance.

Self-Reliance and Communality

In American culture, self-reliance is a socially desirable trait (Hsu, 1972; Kalberg, 2015; Prentice & Carranza, 2002) that reflects an absence of excessive dependence on others, a sense of control over one's life, and personal initiative (Blatt, Quinlan, Chevron, McDonald, & Zuroff, 1982; Clark, Beck, & Brown, 1992; Hirschfeld et al., 1977; Steinberg & Silverberg, 1986). As this signal of self-governance, self-reliance clearly signals agency, but does self-reliance also connote a lack of communality? On the one hand, self-reliance has been shown to emerge independent from or in concert with communality; indeed, some evidence has suggested that emotional closeness with one's parents allows self-reliance to develop in adolescence (Chodorow, 1978; Clark et al., 1992; Kagitcibasi, 1996; Steinberg & Silverberg, 1986). On the other hand, self-reliance has been associated with avoiding close relationships and refusing to ask for help even when one needs it (e.g., Addis & Mahalik, 2003; Bowlby, 1988).

Evidence that self-reliance can signal self-governance, low communality, or some combination of the two is reflected in public perception of the construct. To better understand lay perceptions of

self-reliance, we asked 20 U.S. adults to define a self-reliant person. In response to the prompt, “A self-reliant person is someone who...” respondents described a person who “does not require the help of others to meet [his or her] everyday needs and financial obligations,” “does not have to depend on other people to get a job done,” and “can solve problems by him[her]self that others might consider better solved by an additional person or a group.” At the same time, respondents noted that a self-reliant person is someone who “can be a loner” and “is occasionally headstrong,” and that self-reliance “can be a bad thing if [someone] refuse[s] to ask for help when [he or she] really needs it.”

Self-Reliance and Leadership Evaluations

Self-reliance is an interesting trait to study in the context of leadership evaluations because it appears to be both characteristic and uncharacteristic of people’s beliefs about what makes a good leader (Den Hartog, 1999; Epitropaki & Martin, 2004; Javidan, Dorfman, De Luque, & House, 2006). As a signal for self-governance, self-reliance would likely elicit positive leadership evaluations because of the strong association between perceived agency and leadership ability (Koenig et al., 2011; Lord, et al., 1984). People believe that good leaders are independent of others’ influence, set their own course of action, and are not dependent on others for guidance and direction (Antonakis & House, 2014; Epitropaki & Martin, 2004; Lord et al., 1984). Moreover, dependency (a lack of self-reliance) is associated with conformity and seeking leadership from others (Hansbrough, 2012; Popper & Mayselless, 2003), qualities that are antithetical to leader prototypes (e.g., Yukl, 1998). Stories of self-governance have long woven through narratives of revered political leaders, including Abraham Lincoln and Andrew Jackson (Bellah, Madsen, Sullivan, Swidler, & Tipton, 2007; Turner, 1986). Indeed, the capacity for self-governance is so strongly revered in the American populace that some have opined that it would be difficult to get elected to political office if one strayed from a self-governance narrative (Bellah et al., 2007; Swansburg, 2014).

In contrast, to the extent that self-reliance signals low communality, self-reliance likely elicits negative leadership evaluations because good leaders are presumed to be warm, likeable, and attentive to the social and emotional needs of their followers (Epitropaki & Martin, 2004; Judge, Piccolo, & Ilies, 2004) and not to be asocial (Den Hartog et al., 1999).

To wit, even when leaders are highly competent and skilled, they are evaluated poorly when they are perceived to lack communality (e.g., Heilman & Okimoto, 2007). Thus, on balance, the positive effects of presumed self-governance on leadership evaluations would be undermined to the extent that self-reliance simultaneously conveys low communality. Drawing from expectancy violation theory (Jussim, Coleman, & Lerch, 1987), we suggest that the extent to which self-reliance conveys low communality depends on the gender of the focal person. Specifically, we suggest that self-reliance is associated with low communality for men, but not for women, and therefore relates more positively to leadership evaluations for women than men.

Self-Reliance as a Positive Expectancy Violation for Women

Our prediction that self-reliance is associated with low communality for men, but not women, runs counter to popular theories of gender and leadership evaluations. In particular, role congruity theory predicts that self-reliant women will incur a greater cost to their communality than will self-reliant men because expressing self-reliance violates a gender stereotype for women but confirms a gender stereotype for men. However, role congruity theory assumes that people respond to women’s displays of discrete agentic traits in similar ways—an assumption that expectancy violation theory and extant empirical work have not supported (Prentice & Carranza, 2002; Rudman & Glick, 2001).

Similar to role congruity theory, expectancy violation theory posits that violating a stereotype exerts a greater influence on social judgments than does confirming the same stereotype. Expectancy violation theory diverges from role congruity theory by suggesting that the nature of this influence depends on the valence of the violation in question (see Bettencourt, Dorr, Charlton, & Hume, 2001; Jussim et al., 1987). People who display negative counterstereotypical traits are punished more than people who display negative stereotypical traits, whereas people who display positive counterstereotypical traits are praised more than people who display positive stereotypical traits. Thus, expectancy violation theory predicts that women will be punished for displaying undesirable masculine traits, but praised for displaying positive ones (see Anderson, Lievens, van Dam, & Born, 2006; Prentice & Carranza, 2004).

Differentiating among the desirable and undesirable traits associated with men and women can clarify whether people are punished or praised for violating gender stereotypes (see Prentice & Carranza, 2002; Rudman et al., 2012). Proscriptive traits refer to the undesirable traits associated with each gender. Proscriptive masculine traits (e.g., domineering, controlling) are undesirable for anyone to possess, but are particularly undesirable for women to possess. When women exhibit masculine proscriptive traits, observers assume they lack the desirable traits of their own gender (e.g., when women are dominant, they are presumed not to be communal) (Heilman & Okimoto, 2007; Rudman, 1998). In comparison, prescriptive traits refer to the desirable traits that are associated with each gender (e.g., self-reliance for men and warmth for women) (Burgess & Borgida, 1999; Prentice & Carranza, 2002). Prescriptive masculine traits are not necessarily undesirable for women (Prentice & Carranza, 2002). Rather, whereas men are expected to possess masculine prescriptive traits, women are excused from exhibiting them (e.g., it is permissible for women not to be independent) (Prentice & Carranza, 2002).

According to an assimilation account of expectancy violation theory (Prentice & Carranza, 2004), displaying the opposite gender's prescriptive traits can elicit praise because positive expectancy violations (i.e., displaying positive traits that one is assumed to lack because of his or her group membership) are assimilated or "added to" existing stereotypes (Jussim et al., 1987; Prentice & Carranza, 2004). The violator can benefit from "the best of both worlds;" he or she is assumed to possess positive stereotypical qualities by nature of his or her group membership, and positive counterstereotypical qualities by nature of his or her idiosyncratic expression of these traits (Bettencourt et al., 2001; Prentice & Carranza, 2004).

In line with this idea, people respond more favorably to eloquent football players than to eloquent members of an academic speech team (Bettencourt et al., 2001); they laud male fashion writers more than female fashion writers (Bettencourt et al., 2001); and, in the context of a leaderless-group task, they attribute greater leadership ability to task-initiating women than to task-initiating men (Lanaj & Hollenbeck, 2015). In a direct test of the assimilation account of positive expectancy violation, Prentice and Carranza (2004) found that people rated a female college applicant who expressed positive masculine traits as a better overall candidate for

admission than a male college applicant who expressed the same traits; the reviewers gave the female applicant credit for being more communal than the male candidate, while simultaneously praising her for manifesting positive atypical traits (i.e., masculine traits).

We draw on this assimilation account of people's reactions to positive expectancy violations to argue that self-reliance signals low communality for men but not for women because people attribute self-reliance to the existing stereotype that women are more communal than men. Self-reliance is a prescriptive masculine trait—a desirable trait associated more closely with men than with women (Levant & Pollack, 1995; Prentice & Carranza, 2002). Whereas men are expected to be self-reliant, women are excused for not being so (Prentice & Carranza, 2002). According to expectancy violation theory, displaying self-reliance would be seen as a positive expectancy violation for women because women are negatively stereotyped as being dependent (Prentice & Carranza, 2002). If people assimilate positive counterstereotypical traits to their existing gender stereotypes, we would expect self-reliant women to be seen as more communal than self-reliant men because people would attribute women's self-reliance to the gender stereotype that women are more communal than men. In other words, self-reliance may signal low communality for men but not women because communal feminine stereotypes buffer women from the uncommunal component of self-reliance.

Hypothesis 1. Self-reliant women are seen as more communal than are self-reliant men.

If self-reliant women are seen as more communal than are self-reliant men, then self-reliance may be positively associated with leadership evaluations for women, but not for men. People expect good leaders both to initiate and guide tasks and to exhibit integrity, humility, and respect for others (Epitropaki & Martin, 2004; Judge et al., 2004; Lord & Emrich, 2001). Indeed, people often afford the greatest status and prestige to leaders whom they deem to be both agentic and communal (Kark, Waismel-Manor, & Shamir, 2012; Powell, Butterfield, & Bartol, 2008). As a stereotypical agentic trait, self-reliance likely signals a capacity for self-governance for both men and women that would lead them to be seen as competent (Powers & Zuroff, 1988; Rudman, 1998). However, the extent to which it also signals low communality likely depends on the target's gender. If, as proposed by

expectancy violation theory, people assimilate positive stereotype violations to descriptive stereotypes, self-reliant women would still be seen as more communal than men (Hypothesis 1). Thus, a female advantage in the relationship between self-reliance and leadership evaluations may exist because, whereas self-reliance may signal self-governance for both men and women, it signals low communality for men, but not for women.

Hypothesis 2. Self-reliance is more positively associated with leadership evaluations for women than for men.

Hypothesis 3. Perceived communality mediates gender differences in the relationship between self-reliance and leadership evaluations.

OVERVIEW OF STUDIES

We begin by analyzing 360-degree feedback for a group of young managers working in a range of industries—an ecologically valid context to assess the relationship between self-reliance and leadership evaluations. We then move to a more controlled setting in which to test our hypotheses, one that allows us to eliminate alternative explanations and to test whether perceived communality underlies gender differences in the relationship between self-reliance and leadership evaluations (Hypotheses 1 and 3). We operationalize leadership evaluations as people's broad assessments about whether someone is a good leader. Because evaluations of whether someone is a good leader involve both an assessment of his or her leadership capabilities (e.g., he or she is a good leader) and some degree of approval or endorsement (e.g., I would work or vote for him or her) (Lord et al., 1984; Van Knippenberg & Hogg, 2003), we sought to include items related to both these facets in our measures.

In each of our studies, we compare the proposed female advantage in the relationship between self-reliance and leadership evaluations to prevailing wisdom regarding gender differences in the relationship between agency and leadership evaluations. The popular theoretical view avers that displaying masculine gender proscriptive traits (e.g., dominance) evokes greater backlash against female leaders than against male leaders (Heilman, 2012; Rudman et al., 2012). Indeed, some have argued that backlash is strongest for, and may be specific to, displays of dominance (Rudman & Glick, 2001). To account for this, we compare gender differences in the relationship between self-reliance and leadership evaluations

to gender differences in the relationship between dominance and leadership evaluations.

We also compare self-reliant leaders to leaders who are described positively, but not in terms of any discrete agentic trait (Studies 3 & 4). This comparison tests whether gender differences in the relationship between self-reliance and leadership evaluations are due to exhibiting self-reliance or to simply not exhibiting dominance. These comparison conditions also address whether self-reliance is not just better for women than for men, but is generally perceived as a positive trait for female leaders.

STUDY 1

We test the prediction that self-reliance relates more positively to leadership evaluations of women than men among first-year MBA students who were rated by their supervisors, direct reports, and colleagues on their leadership skills before matriculating into the program.

Method

Participants and procedure. We recruited a cohort of first-year, full-time MBA students from a major U.S. business school to participate in a research study. In the email invitation, we described the general purpose and confidential nature of the study, and provided a link to a survey that included the study measures. Of the 418 students we contacted, 265 agreed to participate, giving a response rate of 63%. Leadership evaluations were available for 248 of these respondents. Participants were entered into a draw for Apple gift cards.

Leadership evaluations. We obtained archived records of participants' 360-degree leadership evaluations, which a leadership center on campus had gathered independently. Prior to the start of their first year in the MBA program, students provided the school with contact information for supervisors, direct reports, and colleagues who would be asked to evaluate them. Evaluators received an email from the school that described the process for completing the evaluation online. Evaluators were informed that the ratings would be confidential and should be made as honestly and accurately as possible.

Evaluators indicated the frequency with which the focal student engaged in different leadership behaviors, such as motivating others, influencing others, communicating effectively, and achieving results. The measure was a composite of 16 items that had been used previously as a measure of leadership

(see Schauberg & Flynn, 2012) and six items that were about the target's influence behaviors ($\alpha = .93$). We included these additional items because of the centrality of influence to definitions of effective leadership (House & Aditya, 1997; Kellerman, 2004). We calculated r_{wg} to assess the degree of interrater agreement for each individual (James, Demaree, & Wolf, 1993; LeBreton & Senter, 2008). We excluded 14 participants for whom the r_{wg} was negative. The average r_{wg} for the remaining participants was .77.¹

Self-reliance. We measured self-reliance with the horizontal individualism scale (see Triandis & Gelfand, 1998), which includes the following items: "I'd rather depend on myself than others;" "I rely on myself most of the time; I rarely rely on others;" "I often do 'my own thing;'" and "My personal identity, independent of others, is very important to me." Participants responded to each item on a five-point scale (1 = strongly disagree; 5 = strongly agree) ($\alpha = .68$). We selected this scale because it was developed for the purpose of capturing the self-reliance component of individualism (see Triandis & Gelfand, 1998).²

Control variables. Self-esteem, dominance, and internal locus of control relate to self-reliance, gender, and leadership evaluations (Howell, & Avolio, 1993; Judge, Bono, Ilies, & Gerhardt, 2002; Kling, Hyde, Showers, & Buswell, 1999). We controlled for these variables because each could provide an alternative account for any observed relationships in our analyses. We measured dominance with its subscale from the achievement motivation scale (Cassidy & Lynn, 1989), locus of control with Rotter's (1966) scale, and self-esteem with a single item (Robins, Hendin, & Trzesniewski, 2001). We also controlled for participants' age because it is positively correlated with both self-reliance and leadership evaluations (Steinberg & Silverberg, 1986;

Stogdill, 1948). We controlled for participants' minority status because women and minorities are both underrepresented in leadership positions (Carter, Simkins, & Simpson, 2003; Catalyst, 2015), so any observed effect regarding gender could be accounted for by one's underrepresented status. We controlled for whether participants were American because self-reliance is a trait that is particularly desirable in American culture (e.g., Triandis & Gelfand, 1998), and so American students may be more inclined than their non-American peers to inflate their responses to these measures (see Barron & Sackett, 2008).

Results

Means, standard deviations, and correlations among variables are presented in Table 1.³

We conducted a hierarchical linear regression in which we included the control variables gender, self-reliance, and the interaction between gender and self-reliance (see Table 2, Models 1 and 3). We also specified a model to assess the interaction between gender and self-reliance in the absence of the control variables (see Table 2, Models 2 and 4).

There was a significant interaction between self-reliance and gender on leadership evaluations. As shown in Figure 1, self-reliance was positively related to leadership evaluations for women, but unrelated to leadership evaluations for men (see Table 2 for simple effects). At low levels of self-reliance (1 *SD* below the mean), men were evaluated as better leaders than women, $B = 0.17$, $SE = 0.09$, $p = .050$. At high levels of self-reliance (1 *SD* above the mean) this pattern reversed, $B = -0.08$, $SE = .09$, $p = .34$.⁴

³ On the whole, the correlations among study variables are consistent with consensus estimates. This provides some assurance of the quality and reliability of the data. The magnitude of the correlations between self-esteem, internal locus of control, and dominance with leadership evaluations are similar to meta-analytic estimates (see Judge et al., 2002, Table 3). Dominance, self-esteem and internal locus of control are all positively related, as expected (see Judge & Bono, 2001), but the magnitude of the positive relationship between self-esteem and internal locus of control is weaker than its population estimate (Judge & Bono, 2001). However, such variation may be common (see Judge & Bono, 2001, Studies 1, 3a, and 3b).

⁴ We also assessed whether gender moderated the relationships between dominance and leadership evaluations and internal locus of control and leadership evaluations. Neither interaction was significant, with both *p* values greater than .31.

¹ We specified a slightly skewed distribution to account for the raters' presumed leniency bias (Meyer, Mumford, Burrus, Campion, & James, 2014). We had reason to believe that because of the raters' familiarity and personal relationships with the ratees, the deviations from raters' true perceptions in our sample were not caused solely by random, nontarget-specific factors (Meyer et al., 2014).

² Triandis & Gelfand (1998) assessed the relationship between horizontal individualism and 75 items that measured self-reliance, competition, emotional distance from in-groups, hedonism, family integrity, interdependence, and sociability to determine which of these different clusters best predicted horizontal individualism and the other scales. They found that only the self-reliance items predicted responses to the horizontal individualism scale.

TABLE 1
Means, Standard Deviations, and Correlations among Study Variables from Study 1

	M	SD	1	2	3	4	5	6	7	8
1. Leadership	5.58	0.43								
2. Gender	0.33	0.47	-0.07							
3. Age	27.31	2.18	0.04	-0.19**						
4. Racial/ethnic minority	0.36	0.48	-0.07	0.07	0.00					
5. International student	0.31	0.46	-0.06	-0.09	0.11 ⁺	0.35**				
6. Self-esteem	3.75	1.05	0.11 ⁺	-0.08	0.09	0.14*	0.10			
7. Dominance	3.58	0.52	0.21**	-0.08	0.08	0.03	-0.01	0.26**		
8. Internal locus of control	19.59	2.79	0.16*	-0.02	0.07	-0.15*	0.02	0.12**	0.18**	
9. Self-reliance	3.84	0.64	0.04	0.00	-0.02	0.02	-0.12 ⁺	-0.06	-0.01	-0.03

Notes: Gender scored as 0 = male, 1 = female. Racial/ethnic minority scored as 0 = nonminority student; 1 = minority student; international student scored as 0 = American student; 1 = international student.

⁺ $p < .10$

* $p < .05$

** $p < .01$

Discussion

Self-reliance was positively related to leadership evaluations for women, but unrelated to leadership evaluations for men, providing initial support for Hypothesis 2. We propose that this difference arises because feminine stereotypes of communality buffer women from uncommunal attributions of self-reliance. However, given that we used first-person assessments of self-reliance in

Study 1, there are a few potential alternative accounts of the findings. First, the results may reflect actual differences between self-reliant women and self-reliant men in terms of their leadership ability. Second, evaluators may see self-reliant women or self-reliant men as having different levels of self-reliance. That is, even if men and women report similar levels of self-reliance, people may perceive women to be more or less self-reliant than men. Finally, the study relied on a design in which the

TABLE 2
Regression Results Predicting Leadership Evaluations from Study 1

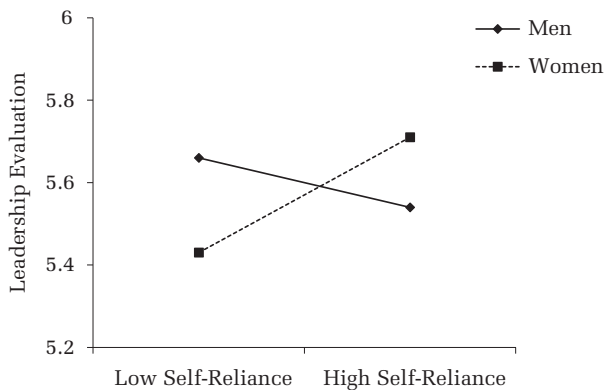
	Model 1	Model 2	Model 3	Model 4
Male (0 = female; 1 = male)	0.03 (0.06)	0.06 (0.06)		
Age	0.00003 (0.01)		0.00003 (0.01)	
Racial/ethnic minority	-0.06 (0.06)		-0.06 (0.06)	
International student	-0.04 (0.07)		-0.04 (0.06)	
Self-esteem	0.03 (0.03)		0.03 (0.03)	
Dominance	0.12* (0.04)		0.12* (0.06)	
Internal locus of control	0.02 (0.01)		0.02 (0.01)	
Self-reliance	0.17* (0.08)	0.16* (0.08)	-0.02 (0.05)	-0.03 (0.05)
Male × Self-reliance	-0.19* (0.10)	-0.20* (0.10)		
Female (0 = male; 1 = female)			-0.03 (0.06)	-0.06 (0.06)
Female × Self-reliance			0.19* (0.10)	0.20* (0.10)
Constant	5.59** (0.05)	5.54** (0.05)	5.63** (0.04)	5.60** (0.03)
N	234	234	234	234
Adj. R ²	0.05	0.01	0.05	0.01
F	2.32	1.89	2.32	1.89

Notes: Unstandardized β coefficients are listed with standard errors in parentheses. Models 1 and 2 show the relationship between self-reliance and leadership evaluations for women. Models 3 and 4 show the relationship between self-reliance and leadership evaluations for men. Racial/ethnic minority scored as 0 = nonminority student; 1 = minority student; international student scored as 0 = American student, 1 = international student.

* $p < .05$

** $p < .01$

FIGURE 1
The Effect of a Leader's Gender and Type of Agentic Trait on Leadership Evaluations from Study 1



Notes: Self-reliance is plotted at ± 1 SD above and below the mean.

independent variables were assessed after the dependent variable, so the possibility exists that any feedback participants received about their leadership evaluations could have influenced their responses to the trait measures.

To address these concerns, we designed experimental paradigms that involve explicit manipulations of self-reliance, which allowed us to better measure its influence on leadership evaluations. Much has been made of the issue of limited generalizability in the gender literature, particularly because many studies have shown that the strength and effect of gender stereotypes varies by industry, company, and job (see Heilman, 2012 for a review). Noting this, we vary the context and the formal position the target holds in each experiment in order to show that the results are not due to a specific leadership role or situation.

STUDY 2

Participants reviewed a webpage for a male or female state congressional representative who expressed dominance or self-reliance. Participants then answered questions about this politician's leadership ability, communality, and competence.

Method

Participants. A total of 130 adult MTurk workers from the United States (85 men, 45 women, $M_{\text{age}} = 30.85$) participated in exchange for \$1.00. We excluded seven participants who reported completing a similar

study in which they were asked to make judgments of a politician based on the politician's profile.⁵ Thus, the sample size was 123 for all analyses.

Procedure. Participants viewed a webpage for either State Representative Ann or John Burr, which included Ann's or John's headshot, biography, committee memberships, and recent news. The "Recent News" section reported that the *Business Development Daily* had just named Ann or John as one of its "45 under 45 to watch in Pennsylvania" because of her or his "accomplishments and future promise."

In the self-reliance condition, the "Recent News" section also stated:

The *Business Development Daily* described Ms. [Mr.] Burr, as "... a skilled politician... who stands out from her [his] peers. She's [He's] known for her [his] self-reliance and self-sufficiency... she's [he's] someone who can always be counted on to get things done on her [his] own." Ms. [Mr.] Burr herself [himself] has been quoted as saying, "For me, it is important to be self-directed. I seek to depend on myself, rather than on others, to get things accomplished."

In the dominance condition, the "Recent News" section stated:

The *Business Development Daily* described Ms. [Mr.] Burr, as "... a strong political force... she's [he's] one of the most ambitious and assertive politicians in Pennsylvania... she [he] has a strong will to power and is making her [his] presence known. Ms. [Mr.] Burr herself [himself] has been quoted as saying that "Being hungry and assertive is everything... it is key to gaining influence." (See Okimoto & Brescoll, 2010 for a similar manipulation.)

Leadership evaluations. Participants responded to four questions regarding their evaluation of the politician's leadership using seven-point semantic differential scales: (1) How likely or unlikely is it that you would vote for him [her] if he [she] ran for the U.S. Senate? (2) How likely or unlikely is it that you

⁵ Studies run with workers on MTurk produce data that is of similar quality to data collected with undergraduate students (Horton, Rand, & Zeckhauser, 2011), but certain checks are recommended to ensure the quality of the responses (Chandler, Mueller, & Paolacci, 2014). In line with these recommended checks, we included a questionnaire before each study that included a reading comprehension question. Participants who answered the question incorrectly were excluded from participating. We also excluded participants who had completed the same or a conceptually similar study in the past.

would vote for John [Ann] Burr for reelection? (3) Should he [she] or shouldn't he [she] be chosen to serve on important and prestigious committees in the state legislature? (4) How much would you like or dislike having him [her] as your boss at your place of work? ($\alpha = .88$).

Communality and competence. Participants indicated using seven-point semantic differential scales how (1) uncaring–caring, (2) unsupportive–supportive, (3) inconsiderate–considerate, (4) incompetent–competent, (5) unintelligent–intelligent, and (6) unskilled–skilled they perceived the state representative to be. We averaged items 1–3 and items 4–6 separately to create measures of communality and competence, respectively (Heilman & Okimoto, 2007).

Manipulation checks. Participants indicated using a five-point scale (1 = not at all; 5 = extremely) the extent to which they perceived the state representative to be each of the following: (1) independent, (2) self-reliant, (3) self-sufficient, (4) dominant, (5) forceful, (6) assertive. We averaged participants' responses to items 1–3 and items 4–6 to create measures of perceived self-reliance ($\alpha = .91$) and dominance ($\alpha = .86$), respectively.

Results

Pre-analysis and analytical approach. In each experiment, we first included participant gender as a potential moderator. However, in no study did participants' gender moderate the effects, so we collapsed across participant gender in all studies. Results are from a 2 (politician gender: male, female) \times 2 (agentic trait: self-reliance, dominance) between-subjects analysis of variance (ANOVA).

Means, standard deviations, and simple effect comparisons are presented in Table 3.⁶

Manipulation checks. The self-reliant politician was seen as more self-reliant compared to the

dominant politician, $F(1, 119) = 8.39, p = .004$. The dominant politician was seen as more dominant compared to the self-reliant politician, $F(1, 119) = 10.19, p = .002$. No other effects emerged for perceived self-reliance and perceived dominance.

Leadership evaluations. There was a main effect of the politician's gender on leadership evaluations, $F(1, 119) = 8.26, p = .005$, but this effect was qualified by an interaction between the politician's gender and agentic trait, $F(1, 119) = 4.28, p = .041$.

The self-reliant female politician was evaluated as a better leader compared to both the self-reliant male politician and the dominant female politician. This latter difference was marginally significant ($p = .061$). No other differences appeared.

Communality. There was main effect of the politician's gender, $F(1, 119) = 10.77, p = .001$, and agentic trait on perceived communality, $F(1, 119) = 3.89, p = .051$. However, a significant interaction qualified these effects, $F(1, 119) = 4.32, p = .040$.

The self-reliant female politician was seen as more communal compared to the self-reliant male politician and the dominant female politician. No other differences appeared.

Competence. There was only a main effect of the politician's gender such that the female politician was seen as more competent compared to the male politician $F(1, 119) = 5.65, p = .019$.⁷

Moderated Mediation. We ran a moderated mediation model to assess whether perceived communality mediated the female advantage in the effect of self-reliance on leadership evaluations (Hypothesis 3). We used a bootstrapping procedure for testing conditional indirect effects developed by Preacher, Rucker, and Hayes (2007). Mediation is indicated by the 95% confidence interval for this indirect effect, excluding zero. We assessed the indirect effect of gender on leadership evaluations through communality separately for self-reliance and for dominance. We also assessed the indirect effect of agentic trait (self-reliance vs. dominance) on leadership evaluations through communality separately for men and for women.

Perceived communality mediated the female advantage in the effect of self-reliance on leadership evaluations (95% CI for the indirect effect: .32 to .99). It also mediated the positive effect of displaying

⁶ The correlations among leadership evaluations, communality, and competence were high, with all r 's greater than .49, and all p values less than .001. However, a confirmatory factor analysis using the SEM procedure in STATA 13.1 showed that a three-factor structure, in which leadership evaluations, communality, and competence are specified as separate factors, fit the data better ($X^2 = 48.86, p = .03, RMSEA = .067, CFI = .98, TLI = .97$) than did a single-factor structure ($X^2 = 308.42, p < .001, RMSEA = .26, CFI = .68, TLI = .59$), or a two-factor structure with communality and leadership evaluations sharing a factor ($X^2 = 157.83, p < .001, RMSEA = .18, CFI = .86, TLI = .81$).

⁷ We assessed whether this difference in perceived competence accounted for any of our findings. All significant effects remained significant, and all nonsignificant effects remained nonsignificant, when competence was included as a covariate.

TABLE 3
Means and Standard Deviations by Condition for the Dependent Variables and Manipulation Checks from Study 2

Dependent Variable	Politician	Self-Reliance		Dominance	
	Gender	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Leadership evaluation	Male	4.13 _{a, a}	(1.07)	4.43 _{a, a}	(1.28)
	Female	5.05 _{b, a}	(0.72)	4.58 _{a, a}	(1.00)
Communality	Male	4.47 _{a, a}	(1.23)	4.58 _{a, a}	(1.33)
	Female	5.76 _{b, a}	(0.89)	4.85 _{a, b}	(1.08)
Competence	Male	5.70 _{a, a}	(0.88)	5.50 _{a, a}	(1.27)
	Female	6.17 _{b, a}	(0.68)	5.88 _{a, a}	(0.87)
Self-Reliance (manipulation check)	Male	4.23 _{a, a}	(0.90)	3.82 _{a, b}	(0.85)
	Female	4.47 _{a, a}	(0.60)	4.05 _{a, b}	(0.67)
Dominance (manipulation check)	Male	3.42 _{a, a}	(0.80)	3.82 _{a, b}	(0.94)
	Female	3.55 _{a, a}	(0.79)	4.05 _{a, b}	(0.58)

Notes: For each dependent variable, the single subscript before the comma compares differences between male and female politicians (column) for each agentic trait. The subscript after the comma compares the self-reliant politician to the dominant politician within gender (row). Different subscripts indicate that the means are significantly different from each other at $p < .05$.

self-reliance instead of dominance on the female politician's leadership evaluations (95% CI for the indirect effect: .18 to .80). No other mediating effects appeared.

Discussion

In support of Hypothesis 2, a self-reliant female politician was evaluated as a better leader compared to a self-reliant male politician. This difference emerged because the self-reliant female politician was seen as more communal compared to the self-reliant male politician (supporting Hypotheses 1 and 3). In comparison, no gender differences emerged in the leadership evaluations or perceived communality of the dominant male and dominant female politicians.

Participants also judged the self-reliant female politician to be a better leader compared to the dominant female politician, although this difference was marginally significant. This finding casts doubt on the notion that the female advantage in the effect of self-reliance on leadership evaluations emerged because self-reliance, in general, is regarded as uncharacteristic of good leaders. Nevertheless, perhaps it is not expressing self-reliance that confers a female advantage, but rather refraining from expressing dominance. We address this possibility in our subsequent studies by including a more neutral comparison condition in which a leader is described positively, but not in terms of any discrete agentic trait.

The lack of backlash against a dominant female politician is somewhat surprising given that both role congruity theory and expectancy violation theory predict such backlash, and previous work has

documented this effect (e.g., Rudman et al., 2012). The political context of this study may explain this difference. Holding a political office may signal a person's communality in a way that being a non-elected leader may not. Politicians are elected to represent the interests of their community, and women are not punished when they display dominance while advocating for others (Bowles, Babcock, & McGinn, 2005). In subsequent studies, we move away from the political context to rule out the possibility that the observed results in Study 2 are situation-specific.

STUDY 3

Participants read an article about a male or female CEO of a financial services firm who was described as dominant, self-reliant, or simply in positive terms but not in relation to any discrete agentic trait. To test Hypotheses 1 and 3, we also manipulated whether the executive was described as communal (see Heilman & Okimoto, 2007 for a similar approach). We manipulated communality in this study because establishing a mechanism using a "moderation-of-process" design has been shown to "provide compelling evidence of a proposed psychological process," which rivals or surpasses statistical mediation (Spencer, Zanna, & Fong, 2005: 850).

Method

Participants. We recruited 535 participants from MTurk in the same manner described in Study 1 (297 men, 233 women, 5 unreported, $M_{\text{age}} = 33.04$).

We excluded 11 participants based on the same criteria as in Study 2. Three participants failed to answer the manipulation check questions, so with listwise deletion the sample was 521 for all analyses.

Procedure. Participants read a short news article about Anne or Andrew Burr, the CEO of Clear Lake Capital (CLC). We manipulated the target's agentic trait and communality by varying the way the target was described.⁸ Participants in the communality condition read the text below, including the part in bold; participants in the control condition did not read the bold text.⁹

As a manipulation of self-reliance, the article described the executive as follows:

Described by her [his] colleagues as "one of the most self-reliant and independent figures in Silicon Valley," Burr can always be counted on to get things done on her [his] own. Burr herself [himself] has said of her [his] career, "For me, it has been important to be self-directed. I seek to depend on myself, rather than on others, to get things accomplished." It is her [his] self-sufficient personality that has marked Burr as a high flier in Silicon Valley **and it is her [his] integrity and concern for others that will keep her [him] soaring.** If CLC is to live up to the lofty price tag it gained when it went public, it will be because investors are willing to put their faith in the delivery of Burr.

As a manipulation of dominance, the article described the executive as follows:

Described by her [his] colleagues as "one of the most ambitious and commanding figures in Silicon Valley" she [he] has a strong will to power and has made her [his] presence known. Burr herself [himself] has said of her [his] career, "...Being hungry and assertive is everything...it's key to gaining influence." It is her [his] dominant personality that has marked Burr as a high flier in Silicon Valley **and it is her [his] integrity and concern for others that will keep her [him] soaring.** If CLC is to live up to the lofty price tag it gained when it went public, it will be because investors are willing to put their faith in the delivery of Burr.

⁸ We used the terms "integrity" and "concern for others" because they are emblematic of previous measurements of communality (see Abele & Wojciszke, 2007; Wojciszke et al., 2009).

⁹ We used two different headshots for each gender to ensure that any of the observed effects were not due to the particular picture used. We observed no moderating effect of the headshot, so we collapsed across this difference.

In the neutral condition, the CEO was described positively, but not in terms of any discrete agentic trait:

Burr has been marked as a high flier in Silicon Valley **and it is her [his] integrity and concern for others that will keep her [him] soaring.** If CLC is to live up to the lofty price tag it gained when it went public, it will be because investors are willing to put their faith in the delivery of Burr.

Leadership evaluation. Participants responded to four questions regarding their evaluation of the CEO's leadership: (1) She [He] is a highly capable CEO (1 = strongly disagree; 7 = strongly agree), (2) She [He] would make a good leader (1 = strongly disagree; 7 = strongly agree), (3) How likely or unlikely would you be to hire her [him] to run a company that you started? (1 = very unlikely; 7 = very likely), (4) How well or poorly managed do you think CLC will be over the next five years? (1 = very poorly managed; 7 = very well managed) ($\alpha = .82$).

Competence. The measure of competence was the same as the one used in Study 2 ($\alpha = .88$).¹⁰

Manipulation checks. Perceived self-reliance was measured with the question: How much do you think she [he] values being able to accomplish things on her [his] own? (1 = not at all; 5 = very much). Perceived dominance was measured with three items adapted from the dominance measure described in Study 1 ($\alpha = .82$). Perceived communality was measured with six items that were adapted from previous research ($\alpha = .89$) (Heilman et al., 2004; Phelan, Moss-Racusin, & Rudman, 2008).

Results

We conducted a 2 (CEO's gender: male, female) \times 3 (agentic trait: self-reliance, dominance, neutral) \times 2 (communality: control, communal) between-subjects ANOVA. Table 4 shows the means, standard deviations, and simple effect comparisons for the dependent variables.

Manipulation checks. There were no two- or three-way interactions among gender, agentic trait, and communality on any of the manipulation checks, but a few other main effects emerged (see Table 4). However, main effects of agentic trait confirmed that the self-reliant CEO was seen as more self-reliant compared to the other CEOs, $F(2, 509) = 18.17, p < .001$, and the dominant CEO was perceived as more dominant than the other CEOs, $F(2, 509) = 27.90, p < .001$. A main effect of communality also confirmed that the communal CEO

¹⁰ The item "How unskilled or skilled is she [he]?" from Study 2 was not assessed in this study.

was seen as more communal compared to the CEO not described as communal, $F(2, 509) = 23.56, p < .001$.

Leadership evaluation. Only a significant three-way interaction among the target's gender, agentic trait, and communality emerged, $F(2, 509) = 4.12, p = .017$ (see Figure 2).

In the control condition, the self-reliant female CEO was seen as a better leader compared to the self-reliant male CEO. This difference disappeared when the CEO was described as communal. This change occurred because the self-reliant male CEO was seen as a better leader when he was described as communal compared to when he was not, $F(1, 509) = 12.76, p < .001$, whereas the self-reliant female CEO was evaluated similarly well regardless of whether she was described as communal, $F(1, 509) = 0.05, p = .82$.

In the control condition, the self-reliant male CEO was seen as a worse leader than both the dominant and the neutral male CEOs. However, in the communal condition, the self-reliant male CEO was seen as a better leader compared to the dominant male CEO. No other differences emerged.

Competence. There were no significant effects on perceived competence.

Discussion

Participants judged a self-reliant female CEO to be a better leader compared to a self-reliant male CEO. In support of Hypotheses 1 and 3, this difference disappeared when these leaders were described as communal. Participants evaluated a male and female CEO similarly when they were described positively, but not in terms of any discrete agentic trait. This suggests that the female advantage in the effect of self-reliance on leadership evaluations is about exhibiting self-reliance, and not solely refraining from dominance.

Unlike Study 2, the self-reliant male CEO was seen as a worse leader compared to the other male CEOs. However, these differences disappeared or were reversed when explicit information was provided about the CEO's communality. This further indicates that self-reliance is regarded as a positive leadership trait to the extent that it is accompanied by communality, and that self-reliance signals low communality for men.

STUDY 4

In Study 4, participants read an article about a real male or female executive of a real technology company. The use of real executives enhances the

external validity of the findings. In order to address concerns about internal validity that may arise from using real leaders, we chose to use two leaders for each gender and controlled for participants' familiarity with the leaders and their companies.

Method

Participants. A total of 557 adult MTurk workers completed the study in exchange for \$1.00 (321 men, 233 women, 3 unreported, $M_{\text{age}} = 30.55$). We excluded 15 participants based on the same criteria used in the previous studies. Due to missing data from participants for the two covariates and the self-reliance manipulation check, the sample size is 533 for all analyses with listwise deletion.

Procedure. Participants read an article about Marissa Meyer (the CEO of Yahoo), Sheryl Sandberg (the COO of Facebook), Jeff Weiner (the CEO of LinkedIn), or Bill Veghte (the COO of Hewlett Packard). The articles were the same as in the control condition from Study 3, with the exception that the articles provided accurate information about the executives (e.g., Marissa Mayer was listed as the CEO of Yahoo, Jeff Weiner was listed as the CEO of LinkedIn). We had two leaders for each gender to ensure that the results were not due to a specific executive. We chose these executives because they were of similar age and all nonfounding leaders of large, publicly traded, Silicon Valley technology firms.

Leadership evaluation. Participants answered three questions about the executive's leadership: (1) How likely or unlikely would you be to hire [him or her] to run a company you founded? (1 = very unlikely; 7 = very likely), (2) If you had the opportunity and funds to invest in [the company], how much money would you be willing to invest from \$0.00 to \$1000.00? (answered on a sliding scale from \$0.00 to \$1000.00), (3) How much do you think [the company's] stock should be valued at from \$0.00 to \$100.00? (answered on a sliding scale from \$0.00 to \$100.00). We z-scored participants' responses and then averaged them ($\alpha = .57$). We used these items because firm performance is one of the most important indicators of effective leadership (see Hogan, Curphy, & Hogan, 1994), and objective responses (e.g., salary) often reveal stereotype-consistent responding that might be hidden otherwise (Biernat & Manis, 1994).

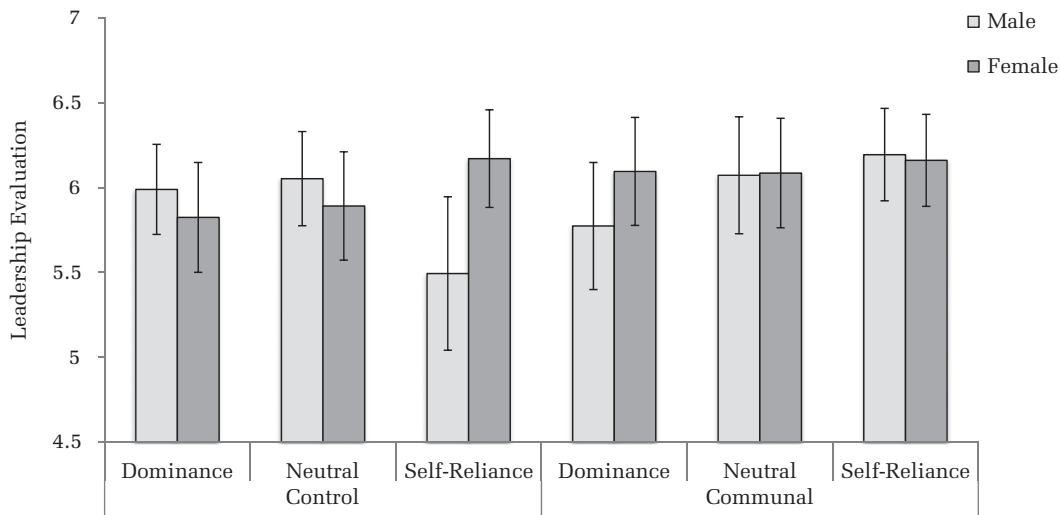
Communality and competence. Participants answered three questions about the executive's communality ($\alpha = .84$) and three questions about the

TABLE 4
Means and Standard Deviations by Condition for the Dependent Variables and Manipulation Checks from Study 3

Dependent Variable	CEO Gender	Control						Communal					
		Self-Reliance		Dominance		Neutral		Self-Reliance		Dominance		Neutral	
		M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Leadership evaluation	Male	5.42 ^{a, a}	(1.54)	6.03 ^{a, ba}	(0.94)	6.19 ^{a, ba}	(0.84)	6.27 ^{a, a}	(0.94)	5.80 ^{a, ba}	(1.19)	6.15 ^{a, aa}	(1.17)
	Female	6.20 ^{b, a}	(1.05)	5.85 ^{a, aa}	(1.07)	5.95 ^{a, aa}	(1.08)	6.25 ^{a, a}	(0.86)	6.18 ^{a, aa}	(0.99)	5.96 ^{a, aa}	(1.34)
Competence	Male	6.30 ^{a, a}	(1.17)	6.43 ^{a, aa}	(0.73)	6.51 ^{a, aa}	(0.87)	6.54 ^{a, a}	(0.63)	6.21 ^{a, aa}	(0.92)	6.39 ^{a, aa}	(1.02)
	Female	6.64 ^{a, a}	(0.75)	6.39 ^{a, aa}	(0.79)	6.36 ^{a, aa}	(0.97)	6.44 ^{a, a}	(0.83)	6.43 ^{a, aa}	(0.80)	6.29 ^{a, aa}	(1.20)
Self-reliance (manipulation check)	Male	4.68 ^{a, a}	(0.57)	4.47 ^{a, aa}	(0.73)	4.23 ^{a, ba}	(0.86)	4.52 ^{a, a}	(0.62)	4.14 ^{a, ba}	(0.75)	4.02 ^{a, ba}	(0.81)
	Female	4.75 ^{a, a}	(0.58)	4.44 ^{a, ba}	(0.74)	4.28 ^{a, ba}	(0.85)	4.60 ^{a, a}	(0.59)	4.24 ^{a, ba}	(0.79)	4.11 ^{a, ba}	(0.98)
Dominance (manipulation check)	Male	5.13 ^{a, a}	(1.36)	6.11 ^{a, ba}	(0.92)	5.51 ^{a, ab}	(1.18)	5.11 ^{a, a}	(1.26)	5.71 ^{a, ba}	(0.87)	4.64 ^{a, bb}	(1.15)
	Female	5.17 ^{a, a}	(1.09)	5.91 ^{a, ba}	(0.89)	5.21 ^{a, ab}	(0.95)	4.44 ^{b, a}	(1.43)	5.43 ^{a, ba}	(1.10)	4.76 ^{a, ab}	(1.28)
Communality (manipulation check)	Male	4.67 ^{a, a}	(1.29)	4.97 ^{a, aa}	(1.04)	5.56 ^{a, bb}	(0.83)	5.71 ^{a, a}	(0.96)	5.24 ^{a, aa}	(1.09)	5.89 ^{a, ab}	(0.94)
	Female	5.22 ^{b, a}	(1.09)	5.09 ^{a, aa}	(1.02)	5.50 ^{a, aa}	(1.14)	5.65 ^{a, a}	(1.04)	5.60 ^{a, aa}	(1.10)	5.70 ^{a, aa}	(1.31)

Notes: For each dependent variable, the single subscript before the comma compares differences between male and female CEOs (column) for each agentic trait (within the control condition or communal condition). The first subscript after the comma compares the self-reliant CEO to the dominant CEO and neutral CEO within gender (row) (within the control condition or communal condition). The second subscript after the comma compares the dominant CEO to the neutral CEO within gender (within the control condition or communal condition). Different subscripts indicate that the means are significantly different from each other at $p < .05$.

FIGURE 2
The Effect of a Leader's Gender, Agentic Trait, and whether he or she was Described as Communal on Leadership Evaluations from Study 3



Notes: Error bars represent the 95% CI around the mean.

executive's competence ($\alpha = .81$) that were similar to the questions asked in Study 1.¹¹

Covariates. Participants indicated whether they were familiar with the executive before the study (0 = not familiar; 1 = familiar) and their familiarity with the executive's company (1 = not at all familiar; 5 = very familiar). A total of 28% of participants in the female executive condition were familiar with the executive before the study, compared to only 4% in the male executive condition, $X^2(1) = 54.72$, $p < .001$. Participants were more familiar with the female executives' companies ($M = 4.11$, $SD = 0.93$) than they were with the male executives' companies ($M = 3.24$, $SD = 1.06$), $F(1, 531) = 102.88$, $p < .001$. We included participants' familiarity with both the executive and the company as covariates in all analyses.

Results

Pre-analysis and analytical approach. The identity of the executive (e.g., Sheryl Sandberg) did not moderate any of the effects of agentic trait, so we

collapsed across target within gender. All results are from a 2 (executive gender: male, female) \times 3 (agentic trait: self-reliance, dominance, or neutral) between-subjects ANOVA.

Means, standard deviations, and simple effect comparisons are presented in Table 5.¹²

Manipulation checks. Main effects of agentic trait confirmed that the self-reliant executive was seen as more self-reliant than the other executives, $F(2, 525) = 13.40$, $p < .001$, and the dominant executive was seen as more dominant than the other executives, $F(2, 525) = 11.87$, $p < .001$. However, there was also a significant interaction on perceived self-reliance, $F(2, 525) = 3.91$, $p = .021$ (see Table 5); whereas the perceived self-reliance of the self-reliant executives or the dominant executives did not differ, the neutral female executive was

¹¹ We changed the item "How inconsiderate or considerate do you think she [he] is?" to "How dishonest or honest do you think she [he] is?" in order to ensure we best reflected aspects of integrity/morality that appear in other measures of communality (see Abele & Wojciszke, 2007; Wojciszke et al., 2009).

¹² The correlations among leadership evaluations, communality, and competence ranged from $r = .35$ to $r = .51$, with all p values less than .001. A confirmatory factor analysis using the SEM procedure in STATA 13.1 showed that a three-factor structure, in which leadership evaluations, communality, and competence are specified as separate factors, fit the data better ($X^2 = 116.06$, RMSEA = 0.09, CFI = 0.95, TLI = 0.92) than did a single-factor structure ($X^2 = 592.94$, RMSEA = 0.20, CFI = 0.67, TLI = 0.56) or a two-factor structure with communality and leadership evaluations sharing a factor ($X^2 = 171.75$, RMSEA = 0.11, CFI = 0.92, TLI = 0.88).

TABLE 5
Means and Standard Deviations by Condition for the Dependent Variables and Manipulation Checks from Study 4

Dependent variable	Executive gender	Self-reliant		Dominant		Neutral	
		M	SD	M	SD	M	SD
Leadership evaluation	Male	-0.06 _{a, a}	(0.76)	0.03 _{a, aa}	(0.76)	0.10 _{a, bb}	(0.64)
	Female	0.14 _{b, a}	(0.71)	-0.12 _{a, ba}	(0.76)	-0.08 _{a, ba}	(0.73)
Communality	Male	5.07 _{a, a}	(1.17)	5.02 _{a, aa}	(1.11)	5.44 _{a, bb}	(1.05)
	Female	5.52 _{b, a}	(1.04)	4.92 _{a, ba}	(1.06)	5.34 _{a, aa}	(1.04)
Competence	Male	6.60 _{a, a}	(0.62)	6.59 _{a, aa}	(0.60)	6.60 _{a, aa}	(0.58)
	Female	6.77 _{a, a}	(0.46)	6.63 _{a, aa}	(0.55)	6.70 _{a, aa}	(0.55)
Self-reliance (manipulation check)	Male	4.55 _{a, a}	(0.74)	4.41 _{a, aa}	(0.66)	4.10 _{a, ba}	(0.74)
	Female	4.71 _{a, a}	(0.63)	4.32 _{a, ba}	(0.74)	4.40 _{b, ba}	(0.73)
Dominance (manipulation check)	Male	5.36 _{a, a}	(1.19)	5.61 _{a, ba}	(1.14)	5.24 _{a, ab}	(1.34)
	Female	5.38 _{a, a}	(1.26)	5.70 _{a, ba}	(1.14)	5.36 _{a, ab}	(1.14)

Notes: For each dependent variable, the single subscript before the comma compares differences between male and female executives (column) for each agentic trait. The first subscript after the comma compares the self-reliant executive to the dominant executive and the neutral executive within gender (row). The second subscript after the comma compares the dominant executive and the neutral executive within gender (row). Different subscripts indicate that the means are significantly different from each other at $p < .05$.

seen as more self-reliant compared to the neutral male executive.

Leadership evaluation. There was a significant gender by agentic trait interaction on leadership evaluations, $F(2, 525) = 3.60, p = .028$ (see Figure 3).

The self-reliant female executive was evaluated as a better leader compared to both the self-reliant male executive and the other female executives. The dominant female executive was seen as a worse leader compared to the dominant male executive, at a marginally significant level ($p = .086$). No other differences emerged.

Communality. There was a significant main effect of agentic trait on perceived communality, $F(1, 525) = 7.01, p = .001$, but this effect was qualified by a significant gender by agentic trait interaction, $F(2, 525) = 3.76, p = .024$.

The self-reliant female executive was seen as more communal than both the self-reliant male executive and the dominant female executive. The neutral male executive was seen as more communal than both the dominant and the self-reliant male executive. No other differences emerged.

Competence. There were no significant effects on perceived competence.

Mediation. To assess Hypothesis 3, we used the same bootstrapping procedure for testing conditional indirect effects that was described in Study 2, but we adjusted the analyses to account for the three-level categorical variable of agency (see Hayes, 2013). Assessing moderated mediation with a categorical variable requires creating $k - 1$ dummy variables, where k is the number of categories. It is then necessary to run multiple tests of the indirect effects.

With each run, one dummy variable is included as the independent variable, one is included as a covariate, and one is omitted from the analysis to serve as the reference category. The analysis does not produce a single test. Rather, it tests the indirect effects for each category relative to the reference category (Hayes, 2013).

Perceived communality mediated the female advantage in the effect of self-reliance on leadership evaluations (95% CI for the indirect effect: .03 to .27), which supports Hypothesis 3. There was no evidence of a significant indirect effect for either the dominant or neutral executives (both 95% CI for the indirect effect included zero).

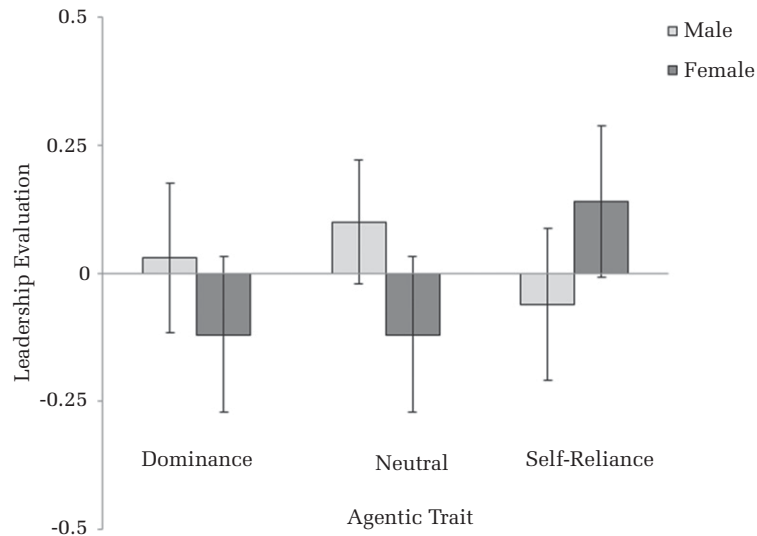
We used the same bootstrapping procedure to assess whether perceived communality mediated the within-gender effects of agentic trait on leadership evaluations. For the female executives, perceived communality mediated the effect of displaying self-reliance versus dominance on leadership evaluations (95% CI for the indirect effect: .10, .30), but did not mediate the effect of displaying self-reliance versus no discrete agentic trait (95% CI for the indirect effect: -.04, .16).

The neutral male executive was seen as a better leader compared to both the self-reliant and the dominant male executives. Perceived communality mediated the difference with self-reliance (95% CI for neutral vs. self-reliance: .02, .23), but not dominance (95% CI for neutral vs. dominance: -.01 to .20).

Discussion

Study 4 shows that a female advantage in the effect of self-reliance on leadership evaluations extends to

FIGURE 3
The Effect of a Leader's Gender and Agentic Trait on Leadership Evaluations from Study 4



Notes: Error bars represent the 95% CI around the mean.

evaluations of real Silicon Valley executives. Although our participants may have come to the study with opinions about the executives and the executives' companies, participants' evaluations of these leaders still shifted based on the agentic trait the executive displayed. These findings suggest that the benefits of self-reliance for leadership evaluations might generalize to situations in which people have existing beliefs about a leader.

As noted previously, the use of real executives may elicit concerns of internal validity. There are several pieces of evidence that help minimize these concerns. First, we observed the predicted interaction between the executive's gender and agentic trait. If the results were due to differences in the executives that were extraneous to our manipulations (e.g., their company), we would not have expected people's responses to the leaders to depend on the agentic trait they exhibited, given that the organization and details about the leader were held constant across the manipulation. Second, the particular target did not moderate any of the results, which suggests that the results generalize across targets. Finally, we used the same article and manipulation of agentic traits that we used in Study 3 (in the control condition). In both studies, we observed a female advantage for the effect of self-reliance on leadership evaluations, which indicates that this

difference does not depend on the real executives we used in this study.

SUPPLEMENTARY ANALYSIS

Across Studies 2–4, a female leadership advantage emerged only for self-reliance. Despite the consistency in this general pattern of results, we note some variation across studies in the magnitude and direction of the simple effects on leadership evaluations. For instance, the self-reliant female leader was judged as a better leader compared to the dominant female leader in Studies 2 and 4, but not in Study 3. We conducted a combined analysis of the data in order to provide a more robust test of these comparisons. Specifically, we assessed the overall standardized mean differences for each reported simple effect across Studies 2–4. The results, which are presented in Table 6, show a clear pattern of self-reliance benefiting the leadership evaluations of female leaders, but undermining the leadership evaluations of male leaders.

GENERAL DISCUSSION

Men ascend to leadership positions faster and more often than women (Catalyst, 2015; Ding, Murray, & Stuart, 2013; Joshi, Son, & Roh, 2014; Phillips, 2005). This gender bias arises in part

because people believe that men are more likely than women to possess the agentic traits deemed necessary for leadership (Eagly & Karau, 2002), which begs a simple question: Does this bias disappear when women are perceived as agentic? Not according to role congruity theory, which posits that agentic women incur a cost to their perceived communality that agentic men do not (Eagly & Karau, 2002). We challenge this popular theoretical view by proposing that self-reliance, a discrete agentic trait, represents a positive expectancy violation for women. Drawing on expectancy violation theory, we posit that self-reliant women are seen as similarly competent, but more communal, than self-reliant men because people assimilate signals of women's self-reliance to feminine stereotypes of communality. As a result, self-reliance benefits women's leadership evaluations more than it does men's.

Four studies support these predictions. A survey using multi-rater feedback of a group of young managers showed that self-reliance positively relates to leadership evaluations for women but not for men. A series of three experiments corroborate this initial finding by showing that self-reliant women were judged as better leaders compared to self-reliant men and better leaders compared to dominant female leaders or female leaders described positively, but not in terms of any agentic trait. The female

advantage in the relationship between self-reliance and leadership evaluations emerged because self-reliant women were seen as more communal compared to self-reliant men. In sum, self-reliance was seen as a positive trait for female leaders, but not for male leaders.

Theoretical Contributions

We introduce an assimilation account of people's reactions to positive expectancy violations of gender stereotypes in order to better understand the link between agency and leadership evaluations (see Prentice & Carranza, 2004). This theoretical perspective suggests that evaluators may praise a leader who exhibits counterstereotypical positive traits because they perceive this individual to have positive stereotypical qualities, by nature of his or her group membership, and positive counterstereotypical qualities, by nature of his or her idiosyncratic expression of these traits (Jussim et al., 1987; Prentice & Carranza, 2004). This alternative view suggests that feminine communal stereotypes may not always "bind" female leaders; they also can buffer female leaders from the negative attributions of low communality associated with certain agentic traits.

Our theory and findings offer a perspective on the effect of gender stereotypes on leadership

TABLE 6
Results from Combined Analysis of Studies 2–4 Assessing the Effect of a Leader's Gender and Agentic Trait on Leadership Evaluations

Comparison conditions	Standard weighted mean difference [95% CI]	Test of overall effect	Significance level
Self-reliant female leader (1) vs. Self-reliant male leader (0)	0.49 [0.26, 0.71]	$z = 4.25$	$p = 0.0001$
Dominant female leader (1) vs. Dominant male leader (0)	-0.12 [-0.34, 0.09]	$z = 1.13$	$p = 0.26$
Neutral female leader (1) vs. Neutral male leader (0)	-0.25 [-0.50, -0.01]	$z = 2.05$	$p = 0.04$
Self-reliant female leader (1) vs. Dominant female leader (0)	0.37 [0.15, 0.59]	$z = 3.33$	$p = 0.0009$
Self-reliant female leader (1) vs. Neutral female leader (0)	0.31 [0.04, 0.52]	$z = 2.31$	$p = 0.02$
Dominant female leader (1) vs. Neutral female leader (0)	-0.12 [-0.35, 0.11]	$z = 0.47$	$p = 0.64$
Self-reliant male leader (1) vs. Dominant male leader (0)	-0.23 [-0.45, -0.02]	$z = 2.10$	$p = 0.04$
Self-reliant male leader (1) vs. Neutral male leader (0)	-0.35 [-0.60, -0.10]	$z = 2.77$	$p = 0.006$
Dominant male leader (1) vs. Neutral male leader (0)	-0.09 [-0.26, 0.07]	$z = 1.04$	$p = 0.30$

Notes: We conducted a combined analysis of the data from Studies 2–4 in order to provide a more robust test of simple effect comparisons using RevMan software. We excluded data from the communality condition in Study 2 because both agency and communality were manipulated in this condition.

evaluations that stands in contrast to what many have suggested in the past: that female leaders are evaluated positively only to the extent that they temper their agency with overt signals of their communality (e.g., Amanatullah & Morris, 2010; Heilman & Okimoto, 2007). According to our theorizing, female leaders may not need to adjust their behavior to provide these cues of communality because, depending on the agentic trait exhibited, observers may infer female leaders' communality from descriptive gender stereotypes (see Prentice & Carranza, 2004). In support of this view, we find that people judge self-reliant female leaders to be more communal than both self-reliant male leaders and dominant female leaders, and as communal as female leaders described positively, but not in terms of any discrete agentic trait.

We reconcile the current findings with past work on the effect of gender stereotypes on leadership evaluations by focusing on differences among discrete agentic traits. Role congruity theory's prediction regarding a male advantage in leadership evaluations is partly based on an undifferentiated view of agentic traits. By attending to differences between desirable (prescriptive) or undesirable (proscriptive) masculine agentic traits (see Prentice & Carranza, 2002), our theoretical framework helps to clarify when gender stereotypes boost evaluations of male leaders and when they boost evaluations of female leaders, thereby advancing understanding about the role of gender stereotypes and stereotype violations on leadership evaluations.

Finally, our theory and findings call attention to the construct of self-reliance and its relationship to leadership evaluations. Themes of self-reliance weave through narratives of political leaders and colorful descriptions of heroes from the American frontier (e.g., Bellah et al., 2007; Riley & Etulain, 1997; Turner, 1986), but self-reliance has been absent from trait theories of leadership. One reason for its absence may be the belief that as a signal of low communality, self-reliance stands in contrast to people's prototypes of good leaders. Our findings bring self-reliance into the fold of trait theories of leadership by showing that it is inherently neither characteristic nor uncharacteristic of leadership evaluations; rather, its association with leadership evaluations depends on the gender of the focal person displaying it. A pair of important insights about the construct of self-reliance can be gleaned from these findings: first, self-reliance is seen as characteristic of effective leaders when it is

accompanied by communality. Second, the extent to which self-reliance is seen as characteristic of effective leaders depends on the gender of the person exhibiting, because whereas self-reliance signals low communality for men, it appears to be judged independently from communality for women.

Limitations and Future Directions

In assessing the potential generalizability of our findings, it is important to attend to the context of our studies. Questions remain about whether the experimental effects of Studies 2–4 would generalize to the leadership evaluations of one's own leader (e.g., if people who work directly with Marissa Meyer read that she is self-reliant, would this improve their evaluations of her?). Whether our experimental findings would extend to a person's own leader would likely depend on whether this leader is seen as communal. Our theory suggests that people assimilate information about a leader's self-reliance to their existing beliefs about this leader's communality (see Jussim et al., 1987; Prentice & Carranza, 2004). This benefits women more than men because people assimilate information about women's self-reliance to feminine stereotypes of communality. However, in more longstanding relationships, people's beliefs about their leader's communality might diverge from these gender stereotypes (see Johnson et al., 2008). Noting this, we predict that people's beliefs about their own leader's communality will determine whether descriptions of the leader's self-reliance positively or negatively influence their evaluations of him or her. In line with this idea, when we manipulated communality in Study 3, participants appeared to attribute information about a leader's self-reliance to information about his or her communality (i.e., self-reliance was just as beneficial for men as it was for women, when men were described as communal).

We found weaker evidence in our experiments to support a male advantage in the effect of dominance on leadership evaluations, a result that diverges from what both role congruity and expectancy violation theory would predict. Our focus on high-status leaders in these experiments might explain this discrepancy. People hold different theories about the traits required of high- and low-ranking leaders (Nichols & Cottrell, 2014). Occupying a high-status leadership role may signal a person's communality in a way that occupying a low-status leadership role may not, because occupying a high-status leadership

role (e.g., being an elected politician or a CEO) indicates a moderate level of social approval. To wit, hierarchical rank can moderate backlash effects against women, with low-ranking women incurring greater penalties compared to high-ranking women for violating feminine stereotypes (Rosette & Tost, 2012).

We focused on broad leadership evaluations. Whereas these broad assessments establish an important difference in people's response to self-reliant male versus self-reliant female leaders, they may mask more fine-tuned assessments, such as people's beliefs about the leadership styles of self-reliant men and self-reliant women. People may make different inferences about self-reliant men's versus self-reliant women's leadership styles (e.g., transformational, transactional, servant) or leadership behaviors, and they may favor the style or behaviors in which they infer self-reliant women lead. Thus, assessing more specific evaluations of self-reliant individuals would help to clarify the nature of the female advantage in leadership evaluations.

We aim to show that self-reliance provides a distinct female advantage, but this advantage may extend to other agentic traits or behaviors. For example, exhibiting task-oriented leadership behaviors (e.g., planning a team's tasks) predicts emergent leadership for women more than for men (Lanaj & Hollenbeck, 2015). Based on expectancy violation theory, we posit that prescriptive masculine traits (desirable traits associated more with men than with women) that might signal a lack of communality have the potential to confer a female advantage in leadership evaluations. Such prescriptive masculine traits might include being analytical, rational, or logical (see Prentice & Carranza, 2002). Similar to self-reliance, these traits can signal competence or strong decision-making skills—characteristics that are central to people's prototypes of good leaders; however, they also can signal that one is cold or unfeeling—characteristics that run counter to such leadership prototypes (e.g., Johnson et al., 2008; Lord et al., 1984).

An interesting avenue for future research would be to assess how knowledge of a female advantage for certain agentic traits (e.g., self-reliance) or agentic behaviors (Anderson et al., 2006; Lanaj & Hollenbeck, 2015) affects women's sense of efficacy in pursuing leadership roles (see Dasgupta & Asgari, 2004). Prevailing wisdom about the effect of gender stereotypes on leadership evaluations can imply that pursuing leadership roles is futile for women because, regardless of their communal

or agentic characteristics, women will be evaluated as worse leaders compared to men. The anticipation of this double bind can undermine women's motivation to engage in stereotypically masculine behaviors (e.g., Amanatullah & Morris, 2010; Bowles, Babcock, & Lai, 2007; Rudman & Fairchild, 2004) or performance because of stereotype threat (Davies, Spencer, Quinn & Gerhardtstein, 2002). Perhaps attending to certain female advantages in leadership evaluations can have the opposite effect.

In suggesting this potential future direction, we do not mean to imply that gender inequity in leadership can or should be addressed solely by identifying the benefits of certain traits on women's leadership evaluations. Both expectancy violation and role congruity theory hold that gender stereotypes lead observers to draw biased inferences about a leader's communality; they just disagree about the nature of this bias. Thus, so long as gender stereotypes affect the manner in which leaders are evaluated, future research should focus on ways to reduce the nature and influence of these negative stereotypes on leadership evaluations.

CONCLUSION

Agency has been depicted as a crucial factor in interpersonal judgments, particularly judgments of leadership ability. In past research, it seemed that personal agency boosted judgments of male leaders but often resulted in a backlash for female leaders. In the present research, we find that self-reliance stands in stark contrast to this general pattern. Time after time, a female advantage emerged in the relationship between self-reliance and leadership evaluations—self-reliance, an agentic trait, boosted evaluations of female leaders more than those of male leaders. We hope these initial findings prompt more research on when and for which leaders discrete agentic traits provide such an advantage.

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