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What We "Say" and What We "Think" About Female Managers: Explicit Versus Implicit Associations of Women With Success

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Abstract

In two studies, we investigated implicit gender stereotypes of successful managers. Using an adaptation of the Implicit Association Test (IAT) named the Successful Manager IAT (SM-IAT) in Study 1, we found that male participants were more likely to implicitly associate men with successful manager traits and women with unsuccessful manager traits compared to reversed pairings. Women, individuals high in internal motivation to respond without sexism, and those low in external motivation to respond without sexism showed positive implicit associations between women and successful manager traits. In contrast, all participants showed positive views of women on workplace-contextualized explicit measures of gender stereotypes. The findings of Study 2 also revealed that implicit gender stereotypes predicted hypothetical workplace outcomes, such that a greater implicit association of men with successful manager traits, and women with unsuccessful manager traits, was linked to increased workplace rewards assigned to male managers by both male and female participants. The findings of our studies have important implications for both gender stereotyping researchers and workplace practitioners. Theoretically, our studies suggest that explicit and implicit stereotypes of female managers diverge, with implicit stereotypes being more likely to highlight traditional, often negative, views of female managers. Our findings point toward a better understanding of female managers' challenges in the workplace.

Keywords

stereotyped attitudes, sex role attitudes, attitudes, employee attitudes, sexism, equity (payment)

How far have we come as a society in fostering gender equality in the workplace? Compared to a few decades ago, there are significantly more women in managerial positions. According to Catalyst (2008), the percentage of women in managerial positions steadily rose from 13.8% in 1950 to 26.1% in 1980 and to 50.6% in 2007. A growing number of legislative decisions and organizational policies seem to support the advancement of women in business, and training programs emphasizing gender diversity in the workplace are increasingly common (Rynes & Rosen, 1995). Recent research confirms this progress. In a comprehensive study with both student and manager samples, Duehr and Bono (2006) found that explicit stereotypes about women in the workplace have changed substantially in the past 15 to 30 years. Their research suggests that male managers see a greater fit between leadership positions and women than before, largely due to a change in stereotyping about women. Men in the workplace regard women as more confident, more assertive, and more ambitious than in the past.

Research suggesting that women are increasingly perceived to be valuable in the workplace has been complemented by work on transformational leadership (Eagly & Carli, 2003; Eagly, Johannesen-Schmidt, & van Engen, 2003). Eagly et al. (2003) conducted a meta-analysis, which revealed that employees rate female leaders higher than male leaders on several transformational leadership characteristics such as charisma, ability to motivate employees, and creativity in solving problems. Additionally, these leadership characteristics are predictive of leadership effectiveness. For example, the meta-analysis of Eagly and colleagues revealed that subordinates with a female leader were more likely to put in extra effort at work, were more satisfied with their leaders, and were generally more effective than subordinates with a male leader.

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Despite these encouraging findings suggesting that women today are seen as good workers and effective leaders, several studies show that women are still disadvantaged in the workplace. Gorman and Kmec (2007) found that women worked harder than men for the same job and that these differences were explained by stricter standards and expectations for female workers. (However, the shifting standards model predicts that in some cases standards and expectations for women in the workplace are lower than for men; Biernat, Manis, & Nelson, 1991) Lyness and Heilman (2006) showed that women in the workplace consistently receive lower performance evaluations than men, especially when they occupy powerful positions. In addition, there is still a wide gender wage gap (Travis, Gross, & Johnson, 2009). Also, although O'Campo, Eaton, and Muntaner (2004) found that women and men are equally educated across a wide variety of occupations, the U.S. Bureau of Labor Statistics (2009b) continues to show that women are earning only 80% of men's earnings. This inequality affects women across levels of employment. At a higher level, women are less likely than men to have managerial and professional positions (U.S. Bureau of Labor Statistics, 2009a) and are less likely to have jobs that require policy-making decisions (O'Campo et al., 2004). At the opposite end of the continuum, employed women are more likely than employed men to fall below the poverty level: 6.1% of employed women, compared to 4.8% of employed men (U.S. Bureau of Labor Statistics, 2007).

There seems to be a conundrum here. Research shows that women in the workplace are seen more positively than ever before and often more positively than men; however, data suggest that gender inequalities in the workplace remain pervasive. How are the increasingly positive stereotypes and attitudes toward women in the workplace to be reconciled with these worrisome statistics? Eagly (2007) suggested that this seemingly paradoxical phenomenon reflects the specific situation at this point in history. Although women's social roles are rapidly changing to incorporate more professional aspects, traditional gender expectations are still the norm in this culture. In the current studies, we further investigate this apparent contradiction between women's advantages and disadvantages in the workplace. We propose that a better understanding of this inconsistency might well lie in disentangling explicit and implicit stereotypes of female managers. We predict that broader views of women, which incorporate images of the successful professional, will be evident in explicit stereotypes of women in managerial roles; however, we expect implicit stereotypes of female managers to reflect more traditional images of women's roles, including incompatibility with managerial success.

Most of the research conducted thus far on gender in the workplace has used explicit assessment methods (Duehr & Bono, 2006; Schein, 1973), with participants self-reporting their stereotypes and attitudes toward women and men. As Duehr and Bono (2006) note themselves, these measures may be problematic because people may not always be willing to report their views. For example, participants may be reluctant to report their negative attitudes toward women because of social desirability concerns and thus may be more likely to control their responses on these explicit measures.

An increasingly common alternative to explicit measures of attitudes is the use of implicit measures. These measures assess associations that are harder to control and thus are relatively free of social desirability concerns. A number of implicit measures have been used in the literature on social biases, for example, the Go-No Go Association Task (Nosek & Banaji, 2001), the Person Categorization Task (Banaji & Hardin, 1996), and the Probe Recognition Task (Stewart, Weeks, & Lupfer, 2003). However, the most commonly used measure by far is the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998). The IAT assesses the degree of implicit association between stimuli such as social groups (e.g., male/female; young/old) and various concepts (e.g., good/bad). Because implicit measures minimize social desirability concerns, they may be particularly effective predictors of subtle discriminatory behavior in the workplace. In fact, research on racial bias (Ziegert & Hanges, 2005) has suggested that negative implicit, but not explicit, views of Blacks reliably predicted racial discrimination in the workplace, especially when paired with a climate supporting racial bias in the organization. This finding suggests that assessing implicit gender stereotypes of successful managers has important implications for applied settings.

Although researchers have used implicit methods to measure a number of different social biases, no known measure has assessed implicit gender stereotypes in the workplace. However, there is a wealth of research on implicit gender attitudes in general, showing that individuals tend to have an overall implicit preference for women who are associated with positive words such as *joy, smile, peace*, and *paradise* (Skowronski & Lawrence, 2001) or *excitement, glad, glee, happy, splendid*, and *superb* (Nosek & Banaji, 2001). This effect was found even in the masculine context of the military by identifying the male and female names used in the IAT as soldiers' names (Skowronski & Lawrence, 2001). However, we should note that the positive/negative traits used in this IAT were (at least in the pre–September 11th American social environment) stereotypic of neither women nor soldiers.

Another line of research in the implicit gender literature looks at associations between gender and particular stereotypes. This research has shown that participants tend to implicitly associate women with traits stereotypic of elementary school teachers and men with traits stereotypic of engineers and accountants (White & White, 2006), women with family stereotypic words and men with career stereotypic words (Nosek, Banaji, & Greenwald, 2002), women with humanities/liberal arts words and men with math/science words (Kiefer & Sekaquaptewa, 2007; Nosek et al., 2002), women with communal traits and men with agentic traits (Rudman & Glick, 2001), women with egalitarian words and men with hierarchical words

(Schmid Mast, 2004), and women with subordinate roles and men with authority roles (Rudman & Kilianski, 2000). Thus, existing research suggests that women are less likely than men to be associated with business domains but leaves open the specific question of how women are implicitly viewed in this domain. Specifically, are women today implicitly associated with successful manager traits to the same degree as men?

In two studies, we used an adaptation of the IAT to investigate implicit associations between gender and managerial success and to explore four related questions: (a) What are the implicit gender stereotypes of successful managers? (b) How do participant gender, hostile (HSS) and benevolent sexism (BSS), as well as motivations to respond without sexism relate to implicit gender stereotypes of successful managers? (c) How do implicit gender stereotypes of successful managers relate to explicit stereotypes of male and female managers? (d) Do implicit gender stereotypes of successful managers predict gender-biased workplace outcomes?

Study 1

In the first study, we created an adaptation of the IAT—a measure we called the Successful Manager IAT (SM-IAT) — to investigate the first two goals of our research: (a) identifying the implicit stereotypes of women and men in managerial roles and (b) identifying the extent to which participant gender, sexism, and motivations to respond without sexism relate to these implicit associations. Through the SM-IAT, we assessed the relative degree of implicit association between gender (men and women) and traits associated with successful and unsuccessful managers in the workplace.

The SM-IAT is different from existing gender IATs (e.g., Nosek et al., 2002; Rudman & Glick, 2001) in several ways. Using an Agentic/Communal IAT, Rudman and Glick (2001) found that men were more likely to be associated with agentic characteristics (e.g., independent, individual, hierarchical) and women were more likely to be associated with communal characteristics (e.g., communal, attached, together). Whereas some agentic characteristics are often predictive of managerial success, some communal characteristics are also associated with success, especially within a transformational leadership perspective (e.g., cooperative, commitment). Thus, our SM-IAT has the potential to tap more directly into implicit stereotypes that predict a successful career trajectory. A second characteristic that distinguishes the SM-IAT from the IAT of Rudman and Glick (2001) is the evaluative nature of the traits. The Agentic/Communal IAT used exclusively positive traits for both agentic and communal categories. In the SM-IAT, successful and unsuccessful manager characteristics were unambiguously classified as ''good'' and ''bad'' (e.g., competent and productive for successful manager traits; slacker and unoriginal for unsuccessful manager traits). As such, we were able to assess positive and negative implicit gender stereotypes of successful managers.

The current study also distinguished itself from previous implicit studies that found that women are less likely than men to be associated with business domains (Nosek et al., 2002). Using the SM-IAT, we investigated implicit stereotypes of women within the managerial domain by explicitly contextualizing the SM-IAT traits in the managerial setting. We suspected that we would find a discrepancy between implicit stereotypes of men and women in managerial roles, such that participants would more greatly associate men with successful manager traits and women with unsuccessful manager traits. Consistent with the research of Duehr and Bono (2006), we did not expect negative stereotypes of women to be evident at an explicit level.

Gender Differences in Implicit Managerial Stereotypes

We further investigated participant gender differences in implicit gender stereotypes of successful managers. The existing general implicit literature shows that women tend to favor women over men, whereas men tend not to show a preference for either men or women (Aidman & Carroll, 2003; Rudman & Goodwin, 2004; Skowronski & Lawrence, 2001). We suspected that our study would yield a different pattern of findings, given that we measured gender stereotypic associations in a masculine domain. Consistent with prior findings of in-group bias on both an implicit and explicit level (Nosek et al., 2002), we expected men to have positive stereotypes of male managers. This implicit association pattern would serve in-group protection roles, such that men look out for their in-group members' interests and seek to maintain their status quo in a traditionally male-oriented domain. In predicting women's responses, two opposing forces must be taken into account. On one hand, women may think more positively of women compared to men, due to in-group bias; on the other hand, it is also possible that women may devalue women in the male-dominated realm of business. This latter finding would be consistent with previous research showing that women tend to implicitly associate women with subordinate-related words, whereas men tend to associate men with power-related words (Haines & Kray, 2005).

Individual Differences in Implicit Managerial Stereotypes

A third goal of Study 1 was to explore how implicit gender stereotypes related to some individual differences: HSS and BSS as well as internal and external motivations to respond without sexism (IMS and EMS, respectively). The Hostile and Benevolent Sexism Scales are part of the Ambivalent Sexism Inventory and measure restrictive attitudes toward women (Glick & Fiske, 1996). HSS comprises unequivocally negative attitudes and emotions directed toward women, especially in nontraditional roles. We did not expect HSS

to correlate with our implicit measure of gender stereotyping, consistent with previous research that did not find a significant relationship between several gender IATs and HSS (Rudman & Kilianski, 2000). In contrast, previous research has shown that BSS significantly correlated with some implicit associations, such as associating men—more than women—with high status words and agentic traits. However, BSS was not significantly correlated with implicit associations of men with career words and women with domestic words (Rudman & Kilianski, 2000). Because our measure of implicit stereotyping more closely resembles this latter IAT, we predicted that BSS and implicit gender stereotypes of successful managers would not be related.

Lastly, we looked at how participants' motivations to control sexism are related to their implicit gender stereotypes of successful managers. In the racial bias literature, Plant and Devine (1998) proposed that people may try to control prejudiced responses either because it is personally important for them to foster nonprejudiced beliefs or because they want to avoid being seen negatively by others, or both. They defined these concepts, respectively, as IMS-internal and EMS-external motivations to control prejudice. Later research investigated how the combination of these motivations was related to the level of implicit racial bias. Devine, Plant, Amodio, Harmon-Jones, and Vance (2002) found that individuals high in IMS and low in EMS displayed lower implicit racial bias than did individuals characterized by any other IMS/EMS combination. Participants high in IMS showed less implicit racial bias because their nonprejudiced beliefs became internalized over time, thus leading to implicit positive attitudes toward Blacks. Those also low in EMS were less likely to be concerned with how they looked to others and were more likely to act and feel according to their nonprejudiced beliefs. If the current measure truly captures internalized associations (relatively free of presentation concerns), we would expect our study to replicate the pattern of findings found by Devine and colleagues, using a version of the IMS/EMS Scale adapted to measure internal and external motivations to respond without sexism (Klonis, Plant, & Devine, 2005). Accordingly, we hypothesized that participants higher in internal, and lower in external, motivation to respond without sexism would display the least negative (or most positive) stereotypes of women in the workplace.

Method

Participants

A total of 301 college students (212 women; 70%) participated in this study as one means to fulfill an introductory psychology course requirement.[1] Of these participants, 133 (44%) identified as White, 94 (31%) as African American, 38 (13%) as Asian, 11 (4%) as Latina/Latino, and 25 (8%) as being from other groups. A chi-square test revealed no racial differences by participant gender, $\chi^2(4, N = 301) = 7.64$, $p = .10$. Participants' age ranged between 18 and 50 years old ($M = 20.40$, $SD = 4.48$), and there were no gender differences in age, $t(299) = .94$, $p = .35$. All participants were native speakers of English.

Procedure and Materials

Participants first completed the SM-IAT, followed (in a randomized order) by explicit measures of sexism and motivations to respond without sexism. Finally, all participants completed demographic information concerning their gender, race, age, and major.

Successful Manager IAT (SM-IAT). We administered an adaptation of the IAT (Greenwald et al., 1998) to assess the degree of association between gender and successful/unsuccessful manager traits. The SM-IAT is a computerized categorization task in which participants are presented sequentially with words indicating gender (Female words: *female, she, her*; Male words: *male, he, him*) or associated with successful/unsuccessful managers (Successful: *boss, competent, executive, productive, innovative, helpful, cooperative, creative, knowledgeable, skilled*; Unsuccessful: *slacker, freeloader, wordy, lackluster, boring, unwise, dim-witted, rambling, dawdling, unoriginal*). To identify successful and unsuccessful manager characteristics for our studies, we consulted published studies assessing views of good and bad managers (Duehr & Bono, 2006; Eagly & Carli, 2003; Eagly et al., 2003). The resulting characteristics were generated based on these findings and were pretested to ensure that they were not significantly different in terms of their gender stereotypicality. In other words, we wanted to make sure that participants did not explicitly view our successful manager traits as more typical of men and our unsuccessful manager traits as more typical of women (or vice versa).

Fourteen pretest participants rated all successful and unsuccessful manager traits used in the IAT in terms of how gender stereotypical they were using a 7-point scale from 1 (*feminine*) to 7 (*masculine*). Analyses revealed that our good manager traits ($M = 3.91$, $SD = 0.40$) were not explicitly seen as more masculine than were our bad manager traits ($M = 4.08$, $SD = 0.36$), $t(13) = -1.18$, $p = .26$. Additionally, pretest participants were asked to estimate the percentage of women and men in the United States, who possess each of the characteristics used in the IAT. We submitted their responses to a 2 (Trait Valence: Successful Manager Trait vs. Unsuccessful Manager Trait) × 2 (Target Gender) repeated measures analysis of variance (ANOVA). The main effect of trait valence demonstrated a sizable tendency for participants to perceive positive characteristics to be more common than negative characteristics, regardless of target gender, $F(1, 13) = 15.42$, $p = .002$, $\eta^2 = .51$. However, neither the main effect of target gender nor the Target Gender × Trait Valence interaction approached significance, $F(1, 13) = .52$, $p = .48$; $F(1, 13) = .24$, $p = .63$, respectively. This

pattern suggests that the successful and unsuccessful manager characteristics included in our IAT were not explicitly associated more with either gender.

The SM-IAT contained initial instructions that presented participants with two lists of positive and negative traits, labeled "good employee" and "bad employee," respectively. Thus, we explicitly contextualized these traits in the workplace setting to ensure that participants were thinking of men and women in workplace roles. Participants' task was to place each word in one of the categories presented on the upper-left and upper-right-hand side of the computer screen by pressing the key "e" when the word belonged to a category presented on the left-hand side of the screen or "i" when the word belonged to a category presented on the right-hand side of the screen. The categories were identified by short concept labels (Female, Male, Good, or Bad). Responses were recorded in milliseconds.

Participants completed one of two counterbalanced versions of the SM-IAT. Both versions consisted of five blocks, modeled after the original IAT (Greenwald et al., 1998). Each block included 12 practice trials and 24 test trials. In one version, the first block had participants categorize male and female words (e.g., *he; her*) by pressing the left key for male words and the right key for female words. In Block 2, participants completed trials in which they categorized successful and unsuccessful manager traits by pressing the left key for successful manager traits and the right key for unsuccessful manager traits. In Block 3, stimuli from all four categories were presented sequentially. This block was stereotype-consistent, such that the Male and Good concept labels were presented together on the left-hand side, and the Female and Bad concept labels were presented together on the right-hand side. In Block 4, the participants were again presented with gender words, but the concept labels were switched, such that female words were correctly categorized by pressing the left key and male words were correctly categorized by pressing the right key. In Block 5, categorizations were combined again but were now stereotype-inconsistent: The Female concept label was paired with the Good concept label, whereas the Male concept label was paired with the Bad concept label. In the second counterbalanced version of the SM-IAT, participants completed the stereotype-inconsistent block before the stereotype-consistent block (i.e., the original Block 4, then Block 2, Block 5, Block 1, and Block 3).

Hostile and benevolent sexism. The HSS and BSS Scales are both 11-item self-report questionnaires that together compose the Ambivalent Sexism Inventory (Glick & Fiske, 1996). The HSS measures sexist antipathy (e.g., "Women exaggerate problems they have at work"), and the BSS assesses subjectively positive but patriarchal views of women (e.g., "A good woman should be set on a pedestal by her man"). Items were rated on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). After reversing the scores for three items for each scale, we constructed overall indices of HSS ($\alpha = .81$) and BSS ($\alpha = .82$), with higher scores reflecting greater sexism.

Motivation to respond without sexism. The Internal/External Motivation to Respond without Sexism Scale (IMS/EMS; Klonis et al., 2005) is a self-report questionnaire containing two subscales. Five items measure participants' IMS (e.g., "Being nonsexist towards women is important for my self-concept"). The other five items measured participants' external motivations to respond without sexism (e.g., "I try to hide any negative thoughts about women in order to avoid negative reactions from others"). All items were measured on a 7-point scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Subscale responses were summed to obtain an IMS total score ($\alpha = .76$) and an EMS total score ($\alpha = .82$) where higher scores indicated higher levels of their respective motivation.

Gender managerial success associations. We prepared the response time data for the SM-IAT in accordance with the Greenwald, Nosek, and Banaji (2003) revised scoring algorithm. We deleted data from one participant, whose number of latencies under 300 ms summed to more than 10% of the total number of trials. For the remaining participants, we focused on response times from the practice and test trials of Block 3, in which participants pressed a key to indicate either men or successful manager traits and another key to indicate either women or unsuccessful manager traits (the stereotype-consistent block) and from the practice and test trials of Block 5, in which the gender/successful manager categories were switched (the stereotype-inconsistent block). The Greenwald et al. algorithm produced the D statistic, which reflected the difference between mean reaction times of stereotype-consistent and inconsistent trials, divided by the pooled standard deviation of reaction times for both blocks. We named this resulting score the Gender-Managerial Success Association. Positive values of the Gender-Managerial Success Association score reflect more greatly associating men, compared to women, with successful manager characteristics, and negative values reflect more greatly associating women, compared to men, with successful manager characteristics.

Results

Preliminary Analyses

Table 1 presents means, standard deviations, and correlations among all the measures for male and female participants. Because the percentage of women approached 71% of our sample, we conducted a Levene's test for equality of variances for the male and female samples. Results showed that variances were homogeneous, $F(298) = .70$, $p = .40$; therefore, no adjustments were applied.

Table 1. Means, Standard Deviations and Correlations of Study 1 Variables for 300 Male and Female Participants

	Men ($n = 88$)		Women ($n = 212$)		Correlations				
Variables	*M*	*SD*	*M*	*SD*	1	2	3	4	5
1. Gender-Managerial Success IAT score	0.41	0.45	−0.25	0.42	–	0.17	0.17	−0.17	0.03
2. Hostile sexism	42.25	11.52	37.85	10.04	0.18*	–	0.17	−0.47*	0.35*
3. Benevolent sexism	43.73	12.10	46.18	11.82	0.01	0.21*	–	0.14	0.12
4. Internal motivation to respond without sexism	26.93	6.24	25.73	6.58	−0.08	−0.28*	−0.04	–	0.06
5. External motivation to respond without sexism	18.65	6.74	16.60	6.73	0.12	0.09	0.12	0.32*	–

Note. IAT = Implicit Association Test. Intercorrelations of study variables for male participants are presented above the diagonal in the correlations side of the table and for female participants, below the diagonal. Positive Gender-Managerial Success Association scores represent a greater association of men than women with managerial success, and negative scores represent a greater association of women than men with managerial success. A Bonferroni correction was applied for multiple comparisons ($n = 4$, $\beta = .01$).
*$p < .05$.

Table 2. Summary of Two Hierarchical Regression Analyses for Gender, Hostile Sexism, Benevolent Sexism, and Internal/External Motivations to Respond Without Sexism Predicting Gender-Managerial Success IAT scores ($N = 300$)

	Step 1 $R^2 = .35$		Step 2 $\Delta R^2 = .01$	
Variable	*B* (*SE B*)	β	*B* (*SE B*)	β
HSS	0.01 (.01)	.14*	0.01 (.01)	.11
BSS	−0.01 (.01)	.02	0.01 (.01)	.12
Gender (0 = male; 1 = female)	−0.63 (.05)	−.55*	−0.64 (.06)	−.56*
HSS × Gender			0.01 (.01)	.04
BSS × Gender			−0.01 (.01)	−.12

	Step 1 $R^2 = .35$		Step 2 $\Delta R^2 = .01$*		Step 3 $\Delta R^2 = .00$	
	B (*SE B*)	β	*B* (*SE B*)	β	*B* (*SE B*)	β
IMS	−0.01 (.01)	−.12*	−0.01 (.01)	−.10*	−0.01 (.01)	−.11*
EMS	0.01 (.01)	.11*	0.01 (.01)	.10*	0.01 (.01)	.10*
Gender (0 = male; 1 = female)	−0.65 (.06)	−.57*	−0.67 (.05)	−.58*	−0.66 (.06)	−.58*
IMS × EMS			0.01 (.00)	.11*	0.01 (.01)	.15*
IMS × EMS × Gender					−0.01 (.01)	−.05

Note. HSS = hostile sexism; BSS = benevolent sexism; IMS = internal motivation to respond without sexism; EMS = external motivation to respond without sexism; IAT = Implicit Association Test.
*$p < .05$.

Associating Gender With Managerial Success

Our first goal was to investigate our hypothesis that participants would associate men, more than women, with successful manager traits and women, more than men, with unsuccessful manager traits. Additionally, we were interested in how participant gender and HSS and BSS related to implicit stereotypes of women in the workplace. An initial one-sample *t* test conducted on the Gender-Managerial Success Association variable showed that implicit scores ($M = -0.06$; $SD = 0.52$) were not significantly different from zero, $t(299) = -1.87$, $p = .06$, suggesting that considered together, male and female participants did not differentially associate gender with managerial success.

Given the possibility that our individual differences variables might prove to moderate this effect, we conducted a moderated multiple regression analysis with the Gender-Managerial Success Association score as a dependent variable. We entered gender (dummy coded: 0 = men; 1 = women), HSS, and BSS as predictors in the first step of the regression, and we added interaction terms between gender and each sexism measure in the second step. HSS and BSS were mean centered, and the interaction terms were computed by multiplying the mean centered variables with gender. The top of Table 2 presents standardized and unstandardized regression coefficients, as well as standard errors for main effects and interaction terms in both regression steps. Results derived from both regression steps revealed a main effect of gender. Follow-up analyses using one-sample *t* tests showed that male participants held strong positive in-group stereotypes, such that they associated men,

more than women, with successful manager characteristics, $t(87) = 8.47$, $p < .001$, $\eta^2 = .45$. Female participants showed the reversed (although weaker) pattern of associating women, more than men, with successful manager characteristics, $t(211) = -8.65$, $p < .001$, $\eta^2 = .26$. Implicit association means and standard deviations for male and female participants are reported in Table 1.

A main effect of HSS on the SM-IAT was also found on the first step of the analysis such that higher HSS was associated with a higher tendency to associate men, compared to women, with successful manager traits. This main effect did not remain significant in the second regression step, suggesting that the relationship between HSS and implicit stereotypes of successful managers is not highly reliable (see Cohen, Cohen, West, & Aiken, 2003, and Kashy, Donnellan, Ackerman, & Russell, 2009, for interpretation of final step regression coefficients). Also, despite bivariate correlations which showed that women's, but not men's, implicit scores were significantly related to HSS (see Table 1), the interaction between HSS and gender was not significant. No other main effects and interactions were significant in the multiple regression analysis.

Gender Stereotypes and Motivations to Respond Without Sexism

The last goal of our study was to investigate the relationship between participants' implicit stereotypes of women in the workplace and internal/external motivations to respond without sexism. We conducted moderated multiple regression analyses, with gender (dummy coded as previously), IMS, and EMS (mean centered) entered as predictors of Gender-Managerial Success Association scores in the first regression step. The second regression step also included the interaction term between IMS and EMS. A third regression step included the three-way interaction term among IMS, EMS, and gender.

The bottom of Table 2 presents standardized and unstandardized regression coefficients, as well as standard errors for main effects and interaction terms in all three regression steps. Main effects derived from the first regression step revealed a significant effect of IMS such that higher internal motivation to control sexism was associated with being less likely to associate men, compared to women, with successful manager characteristics. This main effect remained significant in the second and third regression steps. Similarly, the main effect of EMS was significant in all three regression steps, such that higher external motivation to control sexism was associated with more strongly associating men, compared to women, with successful manager characteristics. Consistent with our previous findings, gender also had a main effect on implicit scores in all three regression steps, with male participants showing more positive stereotypes of male managers than female participants. The pattern of the IMS and EMS main effects are consistent with our hypothesis that individuals with high IMS and low EMS would be more likely than others to implicitly associate women with successful manager traits.

There was also a significant interaction between IMS and EMS on implicit association scores, suggesting that the simple slopes of IMS at high and low levels of EMS are significantly different from each other. This two-way interaction was not qualified by a three-way interaction with gender (see Table 2). To follow up on the two-way interaction between IMS and EMS, following recommendations from Aiken and West (1991), we investigated the slopes of IMS at low and high levels of EMS, calculated at 1 standard deviation below and above the mean of EMS, respectively. At high levels of EMS, the association between IMS and implicit association scores was near zero and not significant ($\beta = -.03$, $p = .70$). At low levels of EMS, there was a trend for the simple slope of IMS to be negatively related to implicit association scores ($\beta = -.13$, $p = .08$). In other words, among participants who had low external motivation to appear unbiased, those with a stronger internal motivation to be unbiased were less likely than others to associate men with successful managerial traits and women with unsuccessful managerial traits, suggesting that such individuals held positive implicit stereotypes of female managers. This relationship did not reach statistical significance, however, and is not discussed further.

Discussion

Consistent with the implicit in-group bias hypothesis (Nosek et al., 2002), Study 1 showed that implicit gender stereotypes of successful managers differed by participant gender. For male participants, findings showed a greater implicit association between men and managerial success than between women and managerial success. Although male participants did not explicitly rate men and women differently in terms of their likelihood of possessing successful manager characteristics, they implicitly associated men more strongly than women with these indicators of success. It is not only that individuals associate men more with careers and women more with family (Nosek et al., 2002), but that, once in a career domain, male evaluators associate men more strongly than women with characteristics that place them poised for success as managers and women more strongly than men with characteristics suggestive of a downward career trajectory.

Women showed the opposite pattern of associating women, more than men, with successful manager characteristics. However, the effect size for women's greater association of women with successful manager characteristics was substantially smaller compared to men's greater association of men with successful manager characteristics. Thus, although in-group bias is evident for female participants, it seems to be slightly attenuated by more traditional gender role beliefs. Future research should further investigate the nature and source of this opposing force to female participants' in-group bias.

The findings of Study 1 suggested that HSS and BSS were not consistently related to implicit gender stereotypes of women in the workplace. This finding is not surprising, given that the HSS and BSS scales are explicit measures of sexism, which were not expected to correlate with implicit stereotypes (Rudman & Kilianski, 2000). However, future studies should further investigate the relationship between HSS and BSS with gender and implicit stereotypes of female managers.

The first study documented an additional individual difference that qualified participants' implicit gender stereotypes of successful managers: internal/external motivations to respond without sexism (IMS/EMS). Consistent with the findings of Devine and her colleagues (2002) on racial bias, participants low in EMS and high in IMS showed the most positive implicit views of female managers. These are participants for whom it is personally important to foster nonsexist beliefs but not particularly important to be regarded nonsexist by others. They are more self-determined (Devine et al., 2002) than any other IMS/EMS combination because there are internal, but not external, constraints that affect their beliefs about gender.

Study 2

In Study 1, we found initial evidence of men's implicit unfavorable stereotypes of managerial women and identified some individual differences correlated with this effect. Study 2 was designed to address issues raised by Study 1, while also exploring the two remaining goals of our research. Specifically, Study 2 included a modified version of the SM-IAT, an explicit measure of workplace-contextualized gender attitudes, and an investigation of the relationship between implicit gender stereotypes and workplace discrimination.

The first issue we addressed was a change in our SM-IAT traits. In Study 1, successful manager characteristics included positions (e.g., executive, boss), transformational leadership characteristics (e.g., creative, innovative), as well as general successful/unsuccessful worker characteristics (e.g., productive, slacker). It is possible that the inclusion of traits that encompass such a broad spectrum of successful/unsuccessful characteristics was not specific enough to capture images of managerial roles. In Study 2, we modified our measure to focus exclusively on successful manager characteristics, excluding outcomes and general worker characteristics The stimuli for the adapted measure, the Successful Manager IAT-2 (SM-IAT2), were derived directly from the findings of Duehr and Bono (2006) about the traits perceived to be most characteristic of successful middle managers (e.g., leadership ability, self-confident). In addition to ranking these traits in terms of how much they characterize successful managers, the findings of Duehr and Bono also revealed that managers explicitly associate both men and women with these successful manager traits. Using the same traits, the current version of the SM-IAT investigated whether this perceived gender equality also holds at the implicit level.

In Study 1, pretest participants explicitly rated the successful/unsuccessful manager traits in terms of their gender stereotypically, which did not allow for a direct comparison between participants' implicit and explicit associations. As such, a second goal of Study 2 was to include a more direct comparison between participants' responses on traditional explicit measures of gender stereotyping and our implicit measure of biased associations in the workplace. To achieve this goal, we added a self-report task in which participants explicitly rated the successful and unsuccessful manager characteristics employed in the SM-IAT2 in terms of their conformity to gender stereotypes. We expected this measure to replicate the finding of Duehr and Bono (2006) that managers explicitly associate men and women with successful manager traits. However, because these explicit views of male and female managers are susceptible to social desirability effects, we expected these ratings to be uncorrelated with implicit ratings of the same traits.

Third, we examined whether implicit associations between gender and managerial success predict discriminatory behavior in the workplace. Although implicit measures are best known for predicting subtle, spontaneous outcomes such as nonverbal behavior (e.g., McConnell & Leibold, 2001), previous studies have found that the IAT also predicts overtly discriminatory behavior in organizational contexts, such as budget cuts for racial and ethnic minority organizations (Rudman & Ashmore, 2007) or discriminatory hiring recommendations for Black applicants (Ziegert & Hanges, 2005). Relevant to gender stereotypes in the workplace, Rudman and Glick (2001) found that associating men, more than women, with agentic characteristics predicted workplace discrimination, such that agentic female (but not male) candidates received negative evaluations when applying for a feminized job. Also, Williams, Paluck, and Spencer-Rodgers (2010) found that associating men, more than women, with wealth predicted higher estimated salaries for men compared to women. Thus, it seems that IATs are often able to predict overt discriminatory behaviors in the workplace. Due to the applied importance of such outcomes, we were also interested in the extent to which the SM-IAT2 predicts harmful behaviors toward women in a hypothetical workplace. Consistent with previous findings on racial bias (Ziegert & Hanges, 2005), we did not expect explicit ratings of male and female managers to predict such workplace discrimination, given that participants' attitude reports may be more likely to be biased by social desirability concerns when using explicit, compared to implicit, assessment methods.

After completing the SM-IAT2, college students were asked to read either a fictitious male or female employee's work portfolio and then to evaluate the employee's work performance on an established Likert-type scale (Parfene, Stewart, & King, 2009). In addition, we incorporated a measure of projected workplace outcomes, adapted from Heilman,

Wallen, Fuchs, and Tampkins (2004) and Masser, Grass, and Nesic (2007), in which participants assigned specific monetary rewards or punishments to the manager based on his or her work performance. We expected a significant effect of implicit stereotypes on workplace outcomes, such that greater association between men and successful manager characteristics on the SM-IAT2 would predict greater monetary awards assigned to male employees. For female employees, we expected a negative relationship between SM-IAT2 and outcomes, with greater associations between men and workplace success predicting fewer monetary awards. Based on Biernat's shifting standards model (Biernat, 2003; Biernat et al., 1991), we predicted that the SM-IAT2 would be more successful in predicting salary allocations for male than for female targets. This model posits that men and women are evaluated relative to different standards. For example, what "successful manager" means when evaluating a man is different from when the same perceiver is evaluating a woman, perhaps because the standards for men in the managerial context are higher, due to competency-based stereotypes of male leaders. Thus, the higher association between men and managerial success would "mean more" than associations between women and managerial success and would lead to a greater chance of a salary increase for men in the workplace. However, women's relative association with successful manager characteristics may be a product of lower standards for female employees who are thus seen as not deserving a salary increase. This model would suggest that the effects of implicit associations on salary allocations for female targets may be less pronounced compared to male targets.

Unlike workplace outcomes, we did not expect implicit gender stereotypes in the workplace to necessarily predict explicit employee evaluations for two reasons. First, because explicit responses are easily controlled by participants, explicit employee evaluations are likely to be influenced by social desirability effects, and thus they are less likely to be related to implicit associations. A second reason comes from Biernat's (2003) shifting standards model which predicts that the influence of stereotypes and implicit associations is more likely to be revealed when targets are evaluated using objective, common-rule measures compared to subjective measures, which are likely to be biased by shifting standards for men and women. More specifically, when using subjective judgments, what "good" means when evaluating a woman's performance may be equivalent to "poor" for a man's performance because of shifting, more stringent standards for men compared to women. Thus, directly comparing ratings of male and female employees may not reveal the influence of negative stereotypes of women in the workplace. However, when participants compare men and women on the same scale, using objective, common-rule judgments, stereotypic associations are more likely to be revealed (Biernat & Manis, 1994). The salary allocation measure used in the current research is just such an objective measure because it evaluates both male and female employees using a common rule (objective salary values) and not a subjective (shifting) standard.

Method

Participants

A total of 71 college students (36 women) participated in the study as one means to fulfill an introductory psychology course requirement. Of these participants, 35 identified as White, 25 as Black, 6 as Asian, 2 as Latino/Latina, and 3 as members of other racial/ethnic groups. A chi-square test revealed no race differences by gender, $\chi^2(4, N = 71) = 2.24$, $p = .69$. Participants' age ranged between 18 and 30 years old ($M = 19.93$, $SD = 1.99$). A t test revealed no gender differences in age, $t(69) = .65$, $p = .61$. A majority (61%) of the participants reported being employed at the time the study was conducted, out of which 12.7% were employed full-time. Of the remaining participants who were not employed at the time of the study, 57% reported having worked full-time at some time in their lives. Thus, most of our participants (83%) were familiar with the workplace context.

Procedure and Design

On entering the lab and signing the informed consent form, all participants completed an adaptation of the SM-IAT measure, a measure we called the Successful Manager IAT–2 (SM-IAT2). Following the implicit measure, participants completed an employee evaluation task, for which they were randomly assigned to read and evaluate the portfolio of either a male or female advertising manager. The portfolio included a job description and the manager's performance assessment. Consistent with research that shows that racial bias is stronger when the target's qualifications are not particularly strong or weak (Dovidio & Gaertner, 2000), the assessment was designed to depict a somewhat ambiguous performance, such that the manager had both strengths and weaknesses. After reviewing the portfolios for 5 minutes, participants completed an employee evaluation (Parfene et al., 2009) as well as a workplace outcome measure (adapted from Heilman et al., 2004; Masser et al., 2007). For the evaluation component, participants rated their agreement with several statements related to manager quality and other workplace-related skills (e.g., "This person is an effective manager"; "This manager shows good customer relations") on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). On the outcome measure, participants were asked to recommend the relative change in the salary of the employee, based on their recent performance assessment. Participants selected one of seven options: giving the manager a $2,000, $1,000, or $500 pay cut; maintaining the same salary; or giving him or her a $500, $1,000, or $2,000 raise.

Finally, all participants completed explicit ratings of successful and unsuccessful manager traits, in a 2 (Trait Valence: Successful vs. Unsuccessful Manager Trait) × 2 (Employee

Gender) repeated measures design. Participants' task was to indicate the percentage of men and women in the business setting who possess each of the successful/unsuccessful manager traits used in the SM-IAT2. The order of the ratings of male and female managers was counterbalanced. Within each employee gender group (male and female manager ratings), the order of the trait ratings was randomized. No explicit individual differences measures were administered in Study 2.

Materials

Materials included the SM-IAT2 and employee portfolios. The SM-IAT2 of the IAT was identical to the one used in Study 1, with the exception of the successful/unsuccessful manager stimuli. On the SM-IAT2, the successful traits were leader, competent, knowledgeable, consistent, self-confident, trustworthy, self-controlled, well-informed, intelligent, fair, purposeful, and skilled, whereas the unsuccessful traits were follower, incompetent, ignorant, inconsistent, insecure, dishonest, reckless, uninformed, dense, biased, aimless, and unskilled. These traits were directly derived from Duehr and Bono (2006), with synonyms requiring minimal alteration from the form given by Duehr and Bono themselves. Unsuccessful manager characteristics were selected via pretesting of antonyms generated for characteristics of successful managers by Duehr and Bono. As in Study 1, the response time data for the SM-IAT2 was prepared in accordance with the revised scoring algorithm of Greenwald and colleagues (2003), yielding a final Gender-Managerial Success Association score for which positive values reflected more strongly associating men, compared to women, with successful manager characteristics.

Results

Implicitly Associating Gender With Managerial Success

An initial one-sample *t* test conducted on the Gender-Managerial Success Association variable showed that implicit scores ($M = -0.01$, $SD = 0.63$) were not significantly different from zero, $t(70) = -.14$, $p = .89$, suggesting that overall participants do not differentially associate gender with managerial success. Similar to Study 1, this effect was qualified by participant gender, which had a significant effect on SM-IAT2 scores, $t(69) = 9.58$, $p < .001$, $r = .75$, such that male participants' scores ($M = 0.47$, $SD = 0.47$) were significantly higher than female participants' scores ($M = -0.48$, $SD = 0.36$), thus indicating a greater association of men with successful manager characteristics for male participants. One-sample *t* tests showed that both men's and women's Gender-Managerial Success Association scores were significantly different from zero. Men showed a strong tendency to associate men, more than women, with successful manager characteristics, $t(34) = 5.92$, $p < .001$, $\eta^2 = .51$. Women showed the opposite tendency to associate women, more than men, with successful manager characteristics, $t(35) = -8.01$, $p < .001$, $\eta^2 = .65$.

Explicitly Associating Gender With Managerial Success

We also analyzed participants' percentage estimations of the men and women in the managerial setting who possess each of the successful and unsuccessful manager traits used in the SM-IAT2. We submitted their responses to a 2 (Trait Valence: Successful vs. Unsuccessful Manager Trait) × 2 (Employee Gender) × 2 (Participant Gender) repeated measures ANOVA. The main effect of trait valence, $F(1, 69) = 110.12$, $p < .001$, $\eta^2 = .61$, showed that participants perceived positive characteristics to be more common than negative characteristics for both men and women in the managerial setting. An interaction between trait valence and participant gender, $F(1, 69) = 5.64$, $p = .02$, $\eta^2 = .08$, revealed that male participants, but not female participants, demonstrated a tendency to perceive negative characteristics to be more common than positive characteristics, regardless of employee gender. Of interest to our research goals, there was a significant interaction between Employee Gender × Trait, $F(1, 69) = 12.73$. $p = .001$, $\eta^2 = .16$. Follow-up analyses revealed that both men and women perceived women ($M = 63.47$, $SD = 13.21$) to be more likely than men ($M = 60.93$, $SD = 12.65$), to possess successful manager characteristics, $t(70) = -2.31$, $p = .02$, Cohen's $d = .20$, and to regard women ($M = 34.81$; $SD = 13.06$) as less likely than men ($M = 39.07$; $SD = 13.34$) to possess unsuccessful manager characteristics, $t(70) = 3.48$, $p = .001$, Cohen's $d = .32$.

As hypothesized, implicit scores were not significantly correlated with explicit ratings of positive and negative traits for either male ($r = -.05$, $p = .78$; $r = -.15$, $p = .42$, respectively) or female ($r = -.09$, $p = .63$, for positive explicit ratings and $r = -.06$, $p = .76$, for negative explicit ratings) participants. These findings suggest that implicit and explicit gender stereotypes of managers do not overlap.

Predicting Hypothetical Managerial Evaluations and Outcomes

Another goal of our research was to investigate whether participants' Gender-Managerial Success Association scores on the SM-IAT2 predicted hypothetical gender-biased workplace evaluations and outcomes. First, we conducted a moderated multiple regression analysis with SM-IAT2 scores, employee gender, and participant gender (dummy coded) as predictors of employee evaluations in the first regression step. The second regression step also included the interaction term between employee gender and SM-IAT2. Standardized and unstandardized regression coefficients as well as standard errors for this analysis are reported in the upper half of Table 3. Findings showed that participants' implicit gender stereotypes of successful managers did not differentially

Table 3. Summary of Two Hierarchical Regression Analyses for Employee Gender, Participant Gender, and Gender-Managerial Success IAT Scores Predicting Employee Evaluations and Salary Allocations ($N = 71$)

	Employee evaluations			
	Step 1 $R^2 = .03$		Step 2 $\Delta R^2 = .00$	
Variable	*B* (*SE B*)	β	*B* (*SE B*)	β
Employee gender (0 = male; 1 = female)	−6.35 (5.18)	−.23	−6.36 (5.24)	−.23
Participant gender (0 = male; 1 = female)	−2.27 (3.40)	−.08	−2.27 (2.43)	−.08
SM-IAT2	−2.47 (4.11)	−.11	−2.43 (4.65)	−.11
Employee Gender × SM-IAT2			−0.10 (5.49)	−.01
	Salary allocations			
	Step 1 $R^2 = .05$		Step 2 $\Delta R^2 = .05$*	
	B (*SE B*)	β	*B* (*SE B*)	β
Employee gender (0 = male; 1 = female)	−0.28 (.27)	−.13	−0.30 (.26)	−.13
Participant gender (0 = male; 1 = female)	−0.07 (.41)	−.03	−0.15 (.40)	−.07
SM-IAT2	0.29 (.33)	.16	0.61 (.36)	.34
Employee Gender × SM-IAT2			−0.83 (.42)	−.31*

Note. IAT = Implicit Association Test; SM-IAT2 = Successful Manager IAT–2.
*$p = .05$.

predict their explicit evaluations of male versus female employees.

In a separate moderated multiple regression analysis, we introduced SM-IAT2 scores, employee gender, and participant gender (dummy coded) as predictors of hypothetical salary recommendations in the first regression step. In a second regression step, we also added the interaction term between SM-IAT2 scores and employee gender. The bottom half of Table 3 presents standardized and unstandardized regression coefficients as well as standard errors for this regression analysis. No main effects were significant in the first regression step. Findings from the second regression step revealed a trend toward significance for the interaction between SM-IAT2 scores and employee gender (the addition of the interaction term in the second regression step added marginally significant incremental variance). Follow-up analyses probing this trend showed that participants' implicit gender-managerial success associations did not significantly predict hypothetical salary recommendations for female employees, $\beta = -.07$, $p = .70$. However, participants' implicit associations on the SM-IAT2 significantly predicted their hypothetical salary recommendations for male employees, $\beta = .39$, $p = .02$, such that the more they associated men (versus women) with managerial success, the higher was the recommended salary for the male employee.

We also examined whether the explicit successful manager evaluations predicted hypothetical workplace outcomes, using analyses analogous to those employed for the SM-IAT2 as predictor. No significant effects were yielded by these analyses. Most notably, explicit workplace-contextualized ratings of men and women did not significantly interact with employee gender to predict either employee evaluations, $\beta = .03$, $p = .91$, or salary allocation, $\beta = .28$, $p = .13$. However, interpretation of these analyses should be tempered by the ordering of these measures, with explicit measures always being administered following the workplace outcome measure. Nonetheless, given that our explicit findings replicated those in previous research (i.e., the lack of male preference on the explicit ratings of manager–gender associations), we believed that a report of the findings for these analyses might prove to be informative for future research on this topic.

Discussion

Study 2 replicated and extended the findings of Study 1. Using successful/unsuccessful manager traits that were directly derived from the findings of Duehr and Bono (2006) on traits most characteristic of successful managers, the current study replicated the finding that men show a greater association between men and managerial success than between women and managerial success. Women showed the opposite pattern of associations, demonstrating strong, positive in-group stereotypes. This finding is important given gender stereotypes' causal influence on women's liking for and perceived ability to succeed in masculine and feminine domains (Oswald, 2008).

For explicit findings, we replicated the overall positive view of women managers found in the research of Duehr and Bono (2006) using manager samples. Surprisingly, our student participants had more positive explicit views of female

managers compared to the student participants of Duehr and Bono. This difference may be explained in part because our sample was predominately a college sample with employment experience, more closely related to the manager sample used by Duehr and Bono than to their student sample.

Study 2 showed further evidence that men's implicit stereotypes of female and male managers differ from their explicit stereotypes. Although men showed positive stereotypes of female managers on explicit ratings, they showed strong negative implicit stereotypes of women in managerial roles. Women exhibited a more consistent pattern of responses, demonstrating positive in-group stereotypes on both explicit and implicit workplace-contextualized measures.

In Study 2, we also found initial evidence that implicit associations between gender and managerial success can predict gender biases in hypothetical workplace settings. Both male and female students' implicit stereotypes predicted their allocation of salary increases for men, such that greater implicit associations between men and managerial success were associated with a higher salary recommendation for the male employee. However, participants' implicit stereotypes were not related to salary allocations for the female employee. It seems that a greater association of men (versus women) with successful manager traits is related to positive salary outcomes for men. For women, however, regardless of whether they are implicitly viewed as successful or unsuccessful managers, salary recommendations are similar. Although restricted to a college student sample, these findings have implications for the persistence of implicit stereotypes and gender discrimination for the next generation of workers.

Our finding that the salary of hypothetical male, but not that of hypothetical female, employees was predicted by participants' SM-IAT2 scores is consistent with Heilman et al. (2004), who found that women who are competent in male-dominated domains were disliked in the workplace and that being disliked predicted lower salary allocations. Similarly, our findings suggest that women's greater association with successful manager characteristics did not predict higher salary projections for the female employee, perhaps because successful female managers are liked less due to their perceived violation of prescribed gender-stereotypic norms. For men, however, being associated with successful manager characteristics paired with being appropriate in the workplace (because they do not violate gender-stereotypic prescriptions) seems to be a recipe for success, at least when it comes to expected pay raises.

General Discussion

Gender-biased stereotypes of the workplace appear to be alive and well. Although they are less obvious at an explicit level, the Successful-Manager IATs revealed that college men tend to associate men, more than women, with managerial success at an implicit level. Overall, it seems that how one is implicitly perceived in a managerial context is related in large part to the match, versus mismatch, of one's gender with that of evaluators. This contingency may pose a disadvantage for women, because men are more likely to be in powerful, decision-making positions. For example, recent data from the U.S. Bureau of Labor Statistics (2009a) showed that women occupy 37.4% of all management positions, with even lower percentages for high-powered managerial positions: 25% of chief executive positions and 30% of general and operations manager positions. As such, men's negative implicit stereotypes of women in managerial positions may potentially have adverse consequences on women's advancement in the business world.

Relationship With Existing Explicit Gender Literature

Our implicit findings are inconsistent with a number of findings in the explicit literature, which suggest that women in the workplace are seen in a positive light: competent (Abramson, Goldberg, Greenberg, & Abramson, 1977), confident, assertive (Duehr & Bono, 2006), and successful leaders (Eagly, Mladinic, & Otto, 1991). What accounts for this inconsistency? We contend that by measuring implicit stereotypes in the workplace, we were able to tap into understudied aspects of gender attitudes. Such implicit measures are generally less likely to be affected by participants' lack of willingness to report their attitudes. Our topic—gender stereotypes in the workplace—might be especially likely to be influenced by social desirability issues, given growing organizational policies that encourage gender equality. This contention was supported by the finding that people who are high in external motivations to control sexism—those people who try to appear nonsexist to avoid negative evaluations from others—were more likely to show implicit negative stereotypes of female managers compared to their low-EMS counterparts. Thus, it seems that we were able to assess stereotypic views that are relatively free of social desirability concerns.

Although our implicit findings seem to contradict previous work that looked specifically at explicit attitudes toward women in managerial roles, the current findings are consistent with a more general model proposed by Susan Fiske and her colleagues. The stereotype content model (Fiske, Xu, Cuddy, & Glick, 1999) posits that explicit competence stereotypes are predicted by group status, such that members of high-status groups are seen as more competent than members of low-status groups, in an attempt to justify social inequalities and to maintain a belief in a just world (Oldmeadow & Fiske, 2007). Our data suggest that the stereotype content model is also evident at an implicit level. Thus, in the male-dominated realm of business, in which men tend to be the higher status group, women may well be more associated with incompetence and men more with competence.

Relationship With Existing Implicit Gender Literature

Our finding that male participants tended to associate women more than men with negative manager characteristics is also seemingly inconsistent with the previous literature that shows that women, compared to men, are more likely to be implicitly associated with positive words such as *joy, smile, peace, paradise, excitement, glad, glee, happy, splendid*, and *superb* (Nosek & Banaji, 2001; Skowronski & Lawrence, 2001). Conversely, the current findings for male participants seem to be consistent with the implicit literature which found that women, compared to men, are less likely to be implicitly associated with stereotypically male domains or with traits such as math, engineering, and authority (Kiefer & Sekaquaptewa, 2007; Rudman & Kilianski, 2000; White & White, 2006). Our findings, although consistent with this literature, take a novel look at implicit gender associations. By finding that men evaluated women more negatively than men when evaluations were contextualized in the managerial domain, we were able to tap into a component of implicit gender attitudes not previously investigated. Women may be associated more than men with positive words, but when those words are related to a male-dominated domain such as business, the associations are reversed.

Future Directions and Limitations

One applied implication of our findings relates to gender diversity in organizations. Specifically, implicit managerial stereotypes predicted gender inequalities in "mock" managerial decisions about pay cuts and increases. Given this finding, we are hopeful that the SM-IAT and SM-IAT2 will improve predictions of actual workplace inequalities, especially in the context of organizational climates that informally foster bias, as found by Ziegert and Hanges (2005). Future research could investigate whether our SM-IAT measures predict gender-biased behaviors in organizations (actual hiring, firing, or salary decisions) and how the organizational climate moderates these relationships.

One limitation of the current studies is that we recruited only college students as participants. Studies with an emphasis on the workplace often use real managers as participants. An investigation of participant demographics revealed that a majority of our participants in the second study reported either being employed at the time of the study or having been employed in the past. However, the extent to which these positions included hiring, performance evaluation, and high-level decision-making responsibilities remains unknown. Thus, it is still unclear whether we can generalize our laboratory findings to organizational settings. Although Eagly, Karau, and Makhijani (1995) found in a meta-analysis that explicit ratings of leadership and managerial effectiveness did not vary based on the setting in which the study was conducted (organizational vs. laboratory), other research (Duehr & Bono, 2006) suggests that students' stereotypes of women are more negative than are managers'. Thus, future studies should investigate implicit associations and their organizational consequences for actual managers in real workplace settings.

The relationships between our implicit measure of gender stereotyping and the explicit and outcome measures address, in part, our measure's validity. Specifically, we were able to replicate implicit–explicit/outcome relationships found in the previous literature. For example, consistent with the findings of Rudman and Kilianski (2000) on the gender role IAT, the SM-IAT was not related to BSS. In addition, when controlling for interactions of gender with HSS and BSS, HSS did not significantly predict implicit association scores on our SM-IAT. Also, our implicit gender stereotyping measure showed the same pattern of relationships with internal/external motivations to control prejudice as implicit racial bias measures (Devine et al., 2002). Finally, consistent with previous research (Rudman & Ashmore, 2007; Ziegert & Hanges, 2005), our measure tended to predict preferential behaviors in terms of salary allocations, thus showing some support of predictive validity. However, these findings should be taken as initial evidence of the SM-IAT's validity, and future studies should further investigate the construct validity of this measure.

Conclusion

The advancement of women in professional settings is becoming an undeniable reality in Western cultures. Unfortunately, this advancement is still accompanied by considerable disadvantages for women in the business world (Eagly & Carli, 2007). The current studies highlight one of these disadvantages: men associate women, more than men, with traits that are inconsistent with successful manager roles. It is hopeful to learn that factors such as female gender and a high-IMS/low-EMS orientation may decrease the strength of these unfavorable associations for women in the workplace. Nonetheless, for both theoretical and pragmatic reasons, the negative implicit stereotypes of female managers are worthy of continued attention in future research.

Note

1. Study 1 comprises data collected in two similar studies, differing only in that one contained a priming manipulation that yielded no significant effects. Given that mean participant age and individual difference scores did not significantly differ between the studies, we combined the presentation of these studies for the current article and do not further discuss the nonsignificant priming manipulation.

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