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Implicit and Explicit Attitudes Toward Female Authority

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Attitudes toward female authority and their relationship to gender beliefs were examined using implicit and explicit measures of each. Implicit attitudes covaried with implicit gender authority beliefs (i.e., linking men to high-authority and women to low-authority roles). Explicit attitudes covaried with explicit gender authority beliefs, feminist identification, and hostile sexism. Thus, gender authority beliefs may influence both conscious and unconscious prejudice against female authorities. Although women showed less explicit prejudice than did men, their implicit attitudes were similarly negative. Finally, the relationship found between two different response latency methods (a priming task for attitudes, a categorization task for beliefs) supports the assumption that implicit measures assess similar constructs (i.e., automatic associations in long-term memory).

When a 747 hits turbulence and the pilot's assurances waft over the intercom, passengers may be more soothed by a baritone than a soprano voice. Patients undergoing operations may be relieved to see hirsute forearms protruding from the surgeon's gloves. There is evidence that men and women alike prefer having a man in charge. A 1996 international Gallup Poll found that the majority of respondents favored male as opposed to female bosses (Gallup, 1996; see also Rubner, 1991). Surprisingly, women expressed this preference more often than did men. In the laboratory, too, men are preferred to women as experts and leaders (e.g., Eagly & Karau, 1991; Watson, 1988; Wright, 1976). Consistent with this bias, women continue to exercise less authority in their jobs than do men (Moore & Shackman, 1996; Wright & Baxter, 1995). As a result, women are promoted and compensated at rates significantly less than those of men (Lyness & Thompson, 1997; Reskin & Ross, 1992; Sonnert & Holton, 1996). Gender inequity vis-à-vis authority is clearly costly to women, then. The present research used both implicit (i.e., automatic) and explicit (i.e., controlled) methods to investigate why men are

preferred to women as leaders: What is it about men that comforts people when they are in charge?

Authority comes in many forms, several of which, including expert, legitimate, and coercive authority, are the purview of men (Johnson, 1976). The gender gap in authority reflects chronic power differences between men and women. This disparity, prevalent throughout history and across cultures, may stem from traditional labor divisions, in which men and women have traditionally been assigned occupational and domestic roles, respectively (Eagly & Wood, 1991). Despite the fact that women now represent half of all workers, perceptions that social roles differ for men and women may be intact (Carli & Eagly, in press). The *gender role* hypothesis is derived from social role theory's emphasis on traditional labor divisions as a structural cause of gender inequities (Eagly, 1987). To the extent that individuals associate men with career and women with domestic roles, they may view female authorities as violating traditional gender role assignments (e.g., family values).

Although social roles have dramatically changed for women, they continue to be underrepresented in leadership roles. The *gender authority* hypothesis posits that labor divisions within the workplace signify different status expectancies for men and women. If gender operates as a cue to legitimacy, men may be accorded more prestige simply by virtue of being male (Berger, Fisek, Norman, & Zelditch, 1977). Furthermore, male dominance in powerful social roles (e.g., politics, law,

religion, and the military) has produced an implicit male leader prototype (Banaji & Greenwald, 1995; Eagly, 1987; Forsythe, Heiney, & Wright, 1997; Vianello & Siemienska, 1990). This prototype may be both cause and effect of a generalized belief that men are superior and thus deserve to control and receive more resources than do women (Jost & Banaji, 1994). As a result, the association between men and authority may be stronger than the association between women and authority. If so, then powerful women may be disliked for breaching an expectancy that men are natural leaders.

Finally, the *gender stereotype* hypothesis posits that different trait expectancies for men and women underlie negative attitudes toward female authority. Because powerful roles have traditionally been filled by men, authority itself may be more associated with male characteristics (e.g., agency) than female characteristics (e.g., communality). This produces "lack of fit" perceptions between women and power (Eagly, 1987; Heilman, 1983; Heilman, Block, Martell, & Simon, 1989). Because gender beliefs are highly prescriptive as well as descriptive (Glick & Fiske, 1999), differential role, authority, and trait associations also might influence prejudice against female authorities on the basis that women should be less career oriented, authority seeking, and agentic (i.e., leader-like) than men (Carli & Eagly, in press; Glick & Fiske, 1999).

These hypotheses are not mutually exclusive. In fact, gender role, authority, and trait beliefs may be interrelated (e.g., Eagly & Steffen, 1984). As a result, each construct may covary with attitudes toward female authority. However, the relative strength of these relationships has not been investigated using either explicit or implicit measures.

A related question is the extent to which prejudice against female authorities might operate implicitly (i.e., below conscious awareness). In general, gender attitudes and belief systems are multifaceted (Ashmore, Del Boca, & Bilder, 1995) and undoubtedly contain unconscious as well as conscious elements. However, little attention has been paid to implicit gender attitudes. To date, the primary focus has been on implicit gender stereotypes (e.g., Blair & Banaji, 1996; Banaji & Greenwald, 1995; Rudman, Greenwald, & McGhee, 1999; see Greenwald & Banaji, 1995, for a review). The present research uniquely examined implicit versus explicit attitudes toward female authority. To assess the former, we used a priming task previously shown to be an effective measure of implicit racism (Fazio, Jackson, Dunton, & Williams, 1995). To assess the latter, we used a self-report instrument (the Gender and Authority Measure), designed and piloted prior to conducting this research (Rudman, 1997).

Overview of Research

Gender role (career vs. domestic), gender authority (high vs. low), and gender trait (agency vs. communality) beliefs were examined as correlates of attitudes toward female authorities. Participants' implicit and explicit (a) attitudes toward female authority and (b) gender beliefs were obtained. As a means of comparison, implicit attitudes toward high-authority male and low-authority male and female targets also were measured.

To provide explicit measures of gender beliefs, we used traditional rating scales (e.g., Rudman et al., 1999). To assess implicit gender beliefs, we used the Implicit Association Test (IAT) (Greenwald, McGhee, & Schwartz, 1998). Previous research has supported the IAT as a powerful and flexible measure of unconscious attitudes and beliefs, including gender stereotypes (Rudman et al., 1999; Rudman, Greenwald, Mellott, & Schwartz, in press). As with priming measures, the IAT assesses response latency and accuracy for judgments designed to be facilitated (or slowed down) by automatic associations. The advantage of these methods is that they do not rely on respondents' ability or willingness to report their attitudes (Dovidio & Fazio, 1992; Greenwald & Banaji, 1995). These methods were necessary to examine unconscious attitudes toward female authority (and implicit gender beliefs as potential predictors). But they were also prudent, because explicit gender measures may provoke social desirability concerns on the part of respondents (e.g., Swim, Aiken, Hall, & Hunter, 1995).

The use of two different response latency methods (a priming measure for attitudes, the IAT for beliefs) is unique to the present research, but theoretically, each assesses automatic associations in long-term memory. Although these associations are evaluative and semantic, respectively, they should covary (Breckler, 1984; Eagly, 1987). If implicit beliefs are linked to implicit attitudes, then the results would support the construct validity of each method. This is particularly important because these measures typically show weak relations with their self-report counterparts (e.g., Fazio et al., 1995; Greenwald et al., 1998). Although the lack of implicit-explicit covariation supports the discriminant validity of unconscious constructs (Greenwald & Banaji, 1995), implicit methods should themselves overlap. The present research provides a test of this hypothesis.

We also examined individual differences in attitudes toward female authority. Considerable evidence shows that women's self-reported attitudes are more egalitarian than are men's (e.g., Ashmore et al., 1995; Eagly, Makhijani, & Klonsky, 1992; Glick & Fiske, 1996; Swim et al., 1995; Williams & Best, 1990). Therefore, men were expected to show more explicit prejudice against female authorities than were women. However, sex differences in implicit prejudice may be less likely given that sex dif-

ferences in implicit gender stereotypes are rare (e.g., Banaji & Hardin, 1996; Blair & Banaji, 1996; cf. Rudman et al., 1999). Finally, feminist identity and hostile sexism (i.e., antifemale attitudes) (Glick & Fiske, 1996) have shown positive and negative relations, respectively, with self-reported attitudes toward women in nontraditional roles (e.g., Forsythe et al., 1997; Glick, Diebold, Bailey-Werner, & Zhu, 1997). They were therefore included as potential correlates for both explicit and implicit attitudes toward female authority.

METHOD

Participants

Seventy-five volunteers from introductory psychology courses participated in exchange for course credit. Data from 6 volunteers were discarded due to incomplete response latency data, leaving 69 participants (35 women, 34 men). Of these, 46% were White, 29% were Asian, and 16% were African American (9% were nonidentified).

Gender and Authority Attitudes

Priming materials. Implicit attitudes were assessed with a priming measure (Fazio et al., 1995). Twenty-four black-and-white schematic drawings of (White) men and women in various occupations served as primes. Six primes each (*n* = 12 primes) showed men and women as authorities, matched on gender and role (doctor, professor, police officer, boss, judge, and scientist). Six primes each also showed men and women in low-authority roles (*n* = 12 primes). Eight of the low-authority primes were matched on gender and role (cook, nurse, model, waiter/waitress); four were unmatched (male hairdresser, male baker; female maid, ballerina). Figure 1 shows examples of high- and low-authority female primes.

Twelve positive and 12 negative adjectives served as the target words. The positive adjectives were *clever, good, competent, healthy, intelligent, loyal, likable, optimistic, pleasant, smart, honest,* and *responsible*. The negative adjectives were *bitter, annoying, careless, cowardly, cynical, dishonest, forgetful, gloomy, harmful, selfish, snobbish,* and *bossy*. These were selected on the basis of norms provided by Williams and Best (1990). The objective was to ensure assessment of implicit attitudes rather than gender stereotypes. Overall, the positive and negative adjectives differed in valence, $t(22) = 30.83$, $p < .001$ (Ms = 628 vs. 373, respectively) but did not differ in gender association, $t(22) = .33$, $p = .75$ (Ms = 495 and 503, respectively).[1]

Procedure. The procedure followed that of Fazio et al. (1995). Computerized instructions informed participants that the task measured their ability to memorize pictures while judging the meaning of words.

Figure 1   Examples of schematic women used as priming stimuli.

Participants' task was to press a key labeled "good" or a key labeled "bad" as quickly as possible to indicate the valence of 24 adjectives (12 positive, 12 negative). The procedure involved five phases. In Phase 1, participants performed a baseline task of 48 trials in which they responded to each adjective twice. The adjectives (randomly presented) were preceded by a row of asterisks presented for 450 ms. Adjectives remained on the screen until participants indicated their judgment. A 2.5-s interval separated each trial. The mean latency for the two trials involving each adjective served as that adjective's baseline latency.

In Phase 2, participants attended to 12 schematic targets portraying men and women in different occupations (e.g., paramedic, telephone operator, typists), ostensibly presented as stimuli for an upcoming memory task. Phase 3 involved a recognition test that included

Phase 2's stimulus pictures and 12 foils.[2] Participants pressed separate keys for "old" and "new" pictures during this phase. The purpose of Phase 3 was to bolster the cover story and thereby increase the likelihood that participants would attend to the primes during Phase 4.

Phase 4 involved the actual priming task, used to assess implicit attitudes toward female authority. The procedure followed Phase 1's procedure but the row of asterisks was replaced by the primes (i.e., schematic men and women shown as high or low authorities). Computerized instructions informed participants that the memory and word judgment tasks would be combined. They were told to memorize the pictures preceding each adjective while continuing to perform quickly and accurately on the judgment task. There were four blocks of trials in Phase 4. Each block consisted of 24 trials, in which each prime appeared once, followed by one of the 24 adjectives. Throughout the course of four blocks, each prime was paired with 2 positive and 2 negative adjectives (total trials = 96). Moreover, each prime type was paired once with each positive and negative adjective. Consistent with the cover story, Phase 5 involved a recognition test in which participants distinguished the 24 primes from 24 foils. The data from Phase 5 indicated that participants attended to the primes (*M* correct = 84%, *SD* = 6.33).

Self-report measure. Explicit attitudes were assessed by the Gender and Authority Measure (GAM). The GAM consists of 15 items on which respondents indicate preference for male versus female authorities in five areas of social influence (i.e., legitimate, expert, reward, coercive, and referent) (French & Raven, 1959). Respondents express agreement with each item on a scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Examples of items include "If I were on trial, I would prefer that the judge be a man" (legitimate); "For most college courses, I prefer a male to a female professor" (expert); "I would rather work for a man than a woman" (reward); "In general, I would rather take orders from a man than a woman" (coercive); and "The people I look up to most are men" (referent). The GAM is scored by averaging respondents' agreement with the 15 items, after reverse-scoring appropriate items. High scores indicate preference for male versus female authorities. In the present sample, the GAM showed adequate internal consistency (α = .82). The appendix contains the GAM items.[3]

Gender Beliefs Assessment

IAT stimulus materials. Implicit gender beliefs were assessed with three IATs (Greenwald et al., 1998). The gender roles IAT used 44 stimulus words: 15 male names (e.g., Brian, Kevin, Paul), 15 female names (e.g., Meg, Karen, Ann), 7 career-meaning words (career, job, salary, office, promotion, finances, and occupation), and 7 domestic-meaning words (domestic, family, marriage, child care, cooking, kitchen, and shopping).[4] The gender authority IAT used the same male and female names in addition to 6 high-status occupational roles (boss, executive, expert, leader, authority, and supervisor) and 6 low-status occupational roles (assistant, secretary, clerk, subordinate, aid, and helper). The gender stereotype IAT used the same male and female names in addition to 7 agentic words (individualistic, competitive, independent, challenging, self-sufficient, autonomous, and hierarchical) and 7 communal words (communal, connected, commitment, together, kinship, supportive, and interdependent). Because prior research showed that the evaluative connotations of judgments affect sex differences in implicit gender stereotypes (Rudman et al., 1999), the stimuli for the gender stereotype IAT were pretested to be matched on valence.[5]

IAT procedure. The five steps of the IAT, described with materials for the gender stereotype task, were as follows: (a) Participants distinguished target concepts by pressing the right key for male names and the left key for female names, (b) participants distinguished the attribute dimension by pressing the right key for agentic words and the left key for communal words, (c) participants responded to male names and agentic words with the right key and female names and communal words with the left key (combined categorization task, abbreviated as male + agency), (d) participants repeated Step 2 but with responses reversed (i.e., they pressed the left key for agentic words and the right key for communal words), and (e) participants responded to female names and agentic words with the left key and male names and communal words with the right key (abbreviated as female + agency). The IAT effect is computed by subtracting the mean male + agency response latency (Step 3) from the mean female + agency response latency (Step 5). Thus, positive difference scores reflect an automatic association between men and agency and women and communality (i.e., implicit stereotypes). The order in which participants performed Step 3 and Step 5 was counterbalanced across participants.[6] Steps 3 and 5 of the IAT are preceded by a practice block (*n* = 20 trials) so that participants become familiar with the concepts under investigation before proceeding to the experimental trials (*n* = 40 trials). The protocol for the gender role and gender authority IATs paralleled the procedure described here.

Self-report measures. Participants completed three explicit measures of gender beliefs, designed to overlap

with the IAT measures. These 7-point scales were anchored by the endpoints of –3 (*more true of women*) and 3 (*more true of men*). The gender roles index assessed the concepts of career, occupation, homemaking, and child care (α = .74). The gender authority index assessed the concepts of authority, boss, leader, expert, subordinate, and assistant (α = .69). The gender stereotype measure (α = .78) assessed five agentic traits (individualistic, competitive, independent, hierarchical, and self-sufficient) and five communal traits (communal, interdependent, supportive, kinship-oriented, and connected). In each case, mean judgments of feminine concepts were subtracted from mean judgments of masculine concepts. Thus, high scores indicated more traditional gender beliefs. These indexes had a possible range of –6 (*nontraditional judgment*) to 6 (*traditional judgment*).

Additional Measures

Participants also completed the Ambivalent Sexism Inventory (ASI) (Glick & Fiske, 1996) and a measure of feminist identification (Henderson-King & Stewart, 1997). The ASI consists of two 11-item subscales that assess hostile sexism (e.g., "Women seek to gain power by getting control over men"; "Feminists are seeking for women to have more power than men") and benevolent sexism (e.g., "Women should be cherished and protected by men"). Participants indicated agreement with ASI items on a scale ranging from 0 (*strongly disagree*) to 5 (*strongly agree*). High scores on ASI subscales reflect more hostile or benevolent sexism. Because several items on the hostile sexism scale pertain to gender and power, we were principally interested in this subscale as a predictor of attitudes toward female authority (Glick et al., 1997). Participants also completed a social identity measure by indicating on scales ranging from 1 (*not at all*) to 5 (*extremely*) the extent to which they psychologically identified with 17 social groups (e.g., students, liberals, conservatives, fraternities, sororities, career women, and feminists). The item of interest was participants' feminist identification (Henderson-King & Stewart, 1997). Because this item was related to identifying with career women, $r(67) = .62$, $p < .001$, we combined these two items to form a feminist identification index.

Procedure

Volunteers were met by the experimenter and escorted to a soundproof cubicle equipped with an IBM-compatible PC. Participants first completed all explicit measures in randomized order. They then completed the priming measure and the IAT measures, in counterbalanced order. In addition, the order in which they completed the three IAT tasks was counterbalanced (there were six possible orders). These counterbalanced procedural variables did not significantly influence latencies.

RESULTS

Data Reduction for Implicit Measures

The data for each trial included response latency (in ms) for correct responses and accuracy (i.e., whether participants initially made an error). Data reduction followed prior procedures (Greenwald et al., 1998). To correct for anticipatory responses and momentary inattention, response latencies greater than 3,000 ms and less than 300 ms were recoded as 3,000 and 300 ms, respectively. In addition, the first trial of each block was dropped because of its typically lengthened latency. Latencies were log-transformed to employ a statistic that has satisfactory distribution of variance for analyses. Analyses of participants' accuracy revealed low error rates on critical trials (*M*s = 5% for IATs, 6% for the priming measure). The priming measure excluded any trial on which participants made an error (Fazio et al., 1995), whereas error trials were included on IAT measures (Greenwald et al., 1998).

Implicit Measures

Priming measure. First, baseline scores for each adjective were formed by averaging each participant's Phase 1 latencies. Facilitation scores were then formed by subtracting the mean latency for each primed target adjective from that adjective's baseline score (i.e., baseline – critical trial latency). These facilitation scores were then averaged separately for positive and negative adjectives within each prime type (high-authority female, high-authority male, low-authority male, and low-authority female). Figure 2 shows the results separately by participant gender. As can be seen, these facilitation indexes showed positive scores (i.e., there was facilitation for both positive and negative adjectives on the primed trials, compared to baseline trials).

The facilitation scores were analyzed in a 2 (prime gender) × 2 (prime authority) × 2 (valence) × 2 (participant gender) mixed-model ANOVA with repeated measures on all but the last factor. As suggested by Figure 2, there was a main effect for prime gender such that facilitation was greater for female than male primes, collapsed across valence. In addition, a Prime Gender × Valence interaction emerged, $F(1, 67) = 4.11$, $p < .05$. Collapsed across authority, there was greater negative than positive facilitation for female primes, $t(67) = 2.89$, $p < .01$, whereas this difference was negligible for male primes, $t < 1.00$. This finding shows a generalized prejudice effect against female primes (i.e., implicit sexism).[7]
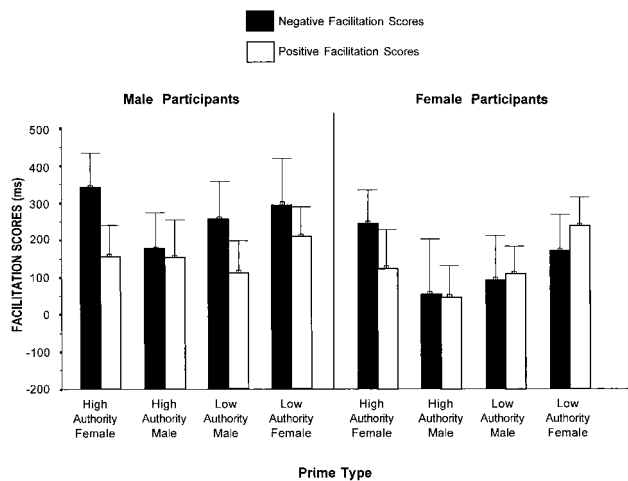
Figure 2   Mean positive and negative facilitation scores (*N* = 69) as a function of participant gender and prime type.

NOTE: Positive scores on the negative facilitation indexes represent facilitation (compared to baseline latencies) when judging negative adjectives paired with representative primes. Positive scores on the positive facilitation indexes represent facilitation (compared to baseline latencies) when judging positive adjectives paired with representative primes. Error bars are 95% confidence intervals for the participants contributing to each mean (34 men, 35 women).

The effect of interest, the three-way within-participants interaction, was robust, $F(1, 67) = 15.31$, $p < .001$. A Prime Gender × Valence interaction was shown for high-authority primes, $F(1, 67) = 13.79$, $p < .001$. Simple effects revealed greater negative than positive facilitation for female authorities, $t(67) = 5.11$, $p < .001$ (*M*s = 295 vs. 141). By contrast, there was no reliable difference between negative and positive facilitation scores for male authorities, $t(67) < 1.00$ (*M*s = 116 vs. 101). This effect reflects more negative attitudes toward female than male authorities (i.e., authority sexism). The Prime Gender × Valence interaction was marginally reliable for the low-status primes, $F(1, 67) = 3.17$, $p < .09$. In this case, negative facilitation was greater than was positive facilitation for low-authority males (*M*s = 176 vs. 112), whereas facilitation scores were similar for low-authority females (*M*s = 234 vs. 227).

To provide a single-index attitude estimate, we computed the difference between the negative and positive facilitation scores for each prime type (i.e., the white bar latencies were subtracted from the black bar latencies shown in Figure 2). Thus, high scores on this measure reflect implicit prejudice (Wittenbrink, Judd, & Park, 1997). Table 1 shows the mean attitude effect for each prime type. Also shown in Table 1 are the separate means for men and women. As can be seen, women's attitudes toward female authorities did not differ significantly from men's. This finding is consistent with the literature

on implicit gender stereotypes (Greenwald & Banaji, 1995) and extends it to implicit attitudes toward female authorities. By contrast, women showed more positive attitudes toward low-authority primes than did men (see Note 7).

Tests of whether each attitude estimate differed significantly from zero were reliable for female authorities, $t(67) = 5.11$, $p < .001$, and marginally reliable for low-authority males, $t(67) = 1.99$, $p = .05$. In contrast, these tests were nonsignificant for high-authority males and low-authority females, both $ts < 1.00$. Thus, evidence for implicit prejudice emerged most strongly for female authorities. Finally, we compared attitudes toward female authorities with attitudes toward each of the other primes. Tests of each contrast were reliable, all $Fs(1, 67) > 4.65$, $ps < .05$. In sum, the findings suggest that attitudes toward female authorities were, on average, negative for both men and women and more negative than were attitudes toward the other primes.

IAT gender beliefs. Figure 3 displays the gender role, gender authority, and gender stereotype IAT results separately by participant gender. The IAT effect is represented by subtracting mean latencies for tasks compatible with traditional beliefs (shown as white bars) from mean latencies for tasks noncompatible with traditional beliefs (shown as black bars) for each measure. Thus, positive scores represent faster performance when performing traditional, compared to nontraditional, tasks. In general, Figure 3 shows this pattern. Tests of whether these effects differed significantly from zero were reliable for each measure, all $ts > 3.80$, $ps < .001$.

Logged IAT effect scores were analyzed in a 3 (IAT task) × 6 (IAT task order) × 2 (combined categorization task order) × 2 (participant gender) mixed-model ANOVA, with repeated measures on the first factor. A main effect for IAT task was shown, $F(2, 122) = 5.67$, $p < .01$. Figure 3 shows that the effect for the gender role IAT (*M* = 169) was stronger than the effects for the gender authority (*M* = 96) and gender stereotype (*M* = 100) IATs. However, this finding was qualified by an IAT Task × Participant Gender interaction, $F(2, 122) = 9.25$, $p < .001$. As shown in Table 1, men scored higher than women on the gender authority IAT.[8] In contrast, there were no reliable gender differences on the gender role and gender stereotype IATs (see Table 1). No other effects emerged in this analysis. The effects for the counterbalanced procedural variables were nonsignificant, all $Fs < 1.66$, $ps > .17$.

Explicit Measures

GAM. Table 1 presents summary statistics for the explicit attitude measure. High scores on this measure reflect preference for male versus female authorities (e.g., doctors, lawyers, professors). As expected, men

TABLE 1:   Summary Statistics for Implicit and Explicit Measures

Measure	Mean	Men's Mean	Women's Mean	Pooled SD	t	p
Priming measures						
Female authority[a]	+154 (d = .64)	+186 (d = .78)	+121 (d = .50)	239.7	1.11	.27
Male authority[b]	+15 (d = .07)	+22 (d = .08)	+7 (d = .06)	262.6	.17	.87
Low-status male[c]	+64 (d = .33)	+144 (d = .59)	−15 (d = −.06)	243.7	2.62	.01
Low-status female[d]	+7 (d = .04)	+86 (d = .33)	−70 (d = −.26)	262.6	2.38	.02
Implicit Association Test (IAT) measures						
Gender role[e]	+169 (d = .95)	+134 (d = .75)	+204 (d = 1.15)	177.7	1.64	.10
Gender authority[f]	+96 (d = .53)	+171 (d = .96)	+20 (d = .11)	177.6	4.04	.001
Gender stereotype[g]	+100 (d = .54)	+85 (d = .46)	+115 (d = .62)	184.0	.72	.47
Explicit measures						
Gender and Authority Measure (GAM)[a]	2.94	3.27	2.61	.52	5.00	.001
Gender role[e]	2.32	2.52	2.11	1.27	1.32	.19
Gender authority[f]	1.92	2.23	1.61	1.23	2.11	.04
Gender stereotype[g]	1.06	.89	1.23	.97	1.49	.14
Ambivalent Sexism Inventory (ASI) hostile	2.37	2.90	1.84	.88	2.95	.004
ASI benevolent	2.74	3.01	2.47	.77	5.39	.001
Feminist identification	2.44	2.09	2.80	1.02	2.90	.005

NOTE: Priming and IAT scores are in ms. Gender differences were examined via t tests (df = 67). Effect sizes are Cohen's d. Effect sizes were computed using the pooled standard deviation for men and women. Large, moderate, and small effect sizes correspond to ds of .8, .5, and .2, respectively (Cohen, 1988).
a. High scores indicate negative attitudes toward female authorities.
b. High scores indicate negative attitudes toward male authorities.
c. High scores indicate negative attitudes toward low-authority males.
d. High scores indicate negative attitudes toward low-authority females.
e. High scores indicate that, compared to women, men were more associated with careers.
f. High scores indicate that, compared to women, men were more associated with authority work roles.
g. High scores indicate that, compared to women, men were more associated with agentic traits.
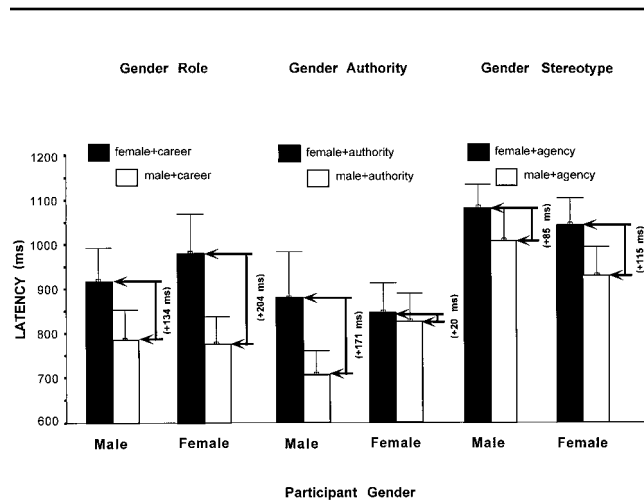
Figure 3   Mean Implicit Association Test (IAT) latency results (N = 69) as a function of participant gender and IAT (gender roles, gender authority, and gender stereotypes).
NOTE: Only latencies for the traditional and nontraditional tasks are shown. Practice blocks and single categorization blocks are not included in the figure. Data are collapsed across counterbalanced procedural variables, which did not have significant influences on IAT effects. Error bars are 95% confidence intervals for the participants contributing to each mean (34 men, 35 women).

scored higher than women on this measure, t(67) = 5.00, p < .001 (Ms = 3.27 vs. 2.61).

Gender beliefs. Table 1 presents data for the explicit gender role, gender authority, and gender stereotype measures. High scores on each measure correspond to traditional gender beliefs. As can be seen, men scored higher than women on the gender authority index, t(67) = 2.11, p = .04. That is, men associated men with high authority and women with low authority more than did women. In contrast, no reliable gender differences emerged on the gender role or gender stereotype ratings. These findings parallel those for the IAT measures. Although the means for each measure are relatively low (compared to an upper limit of 6.00), tests of whether each mean differed significantly from the neutral point were reliable, all ts > 9.00, ps < .001.

Additional measures. Table 1 also shows the results of the ASI Hostile, ASI Benevolent, and feminist identification measures. In each case, gender differences were found. Men were more likely to show evidence of hostile sexism (e.g., antifeminism) and benevolent sexism (e.g., putting women on a pedestal) than were women. In contrast, women were more likely to psychologically identify with feminists and career women than were men.

Relationships Among Explicit Measures

Table 2 presents the correlations among the explicit measures. Because gender differences in these measures could inflate these relations, we report first-order correlations, controlling for participant gender.

Explicit attitude relations. The top half of Table 2 shows the relations among the explicit attitude measure (GAM), hostile sexism, and benevolent sexism (ASI subscales). As can be seen, preference for male authorities (GAM) was related to hostile sexism, $r(66) = .38$, $p < .001$. Thus, antifemale attitudes covaried with prejudice against female authorities (see also Glick et al., 1997). In contrast, benevolent sexism was only weakly related to preference for male authorities. Finally, the hostile and benevolent subscales were related, consistent with Glick and Fiske's (1996) conceptualization of sexism as an ambivalent construct.

Explicit gender belief relations. Table 2 also shows the relations among the explicit gender authority, gender role, and gender stereotype measures. As can be seen, gender authority and gender role beliefs were strongly related, $r(66) = .57$, $p < .001$. This finding supports social role theory's argument that traditional labor divisions (career vs. domestic roles) are linked to status and authority differences for men and women (Eagly, 1987). No other significant relations emerged. Although social role theory posits that gender stereotypes stem from traditional labor divisions and that stereotypes, in turn, support role and authority differences, these relations were not shown. Instead, gender stereotypes appeared to be independent of gender role and authority beliefs, using explicit measures (cf. Eagly & Steffen, 1984).

Explicit attitude-beliefs relations. The bottom half of Table 2 shows the focal relations among prejudice against female authorities (GAM) and explicit gender beliefs. The primary aim of this analysis was to examine support for the gender role, gender authority, and gender stereotype hypotheses. As can be seen, prejudice against female authorities was related to gender authority beliefs, $r(66) = .31$, $p < .01$. Individuals who associated men with high-authority roles (e.g., boss, leader, expert) and women with low-authority roles (e.g., subordinate, clerk, aid) also showed preference for male authorities across a variety of domains (e.g., politics, education, health). In contrast, the GAM was weakly related to gender role beliefs and negligibly related to gender stereotypes. In sum, the results support the gender authority hypothesis, whereas no support was shown for the gender role and gender stereotype hypotheses, using explicit measures.

Feminist identification. The bottom row of Table 2 shows that feminist identification was related to the

TABLE 2:   First-Order Correlations Among Explicit Measures

Measure	Gender Attitudes			Gender Beliefs		
	1	2	3	4	5	6
Explicit gender attitudes						
1. Gender and Authority Measure (GAM)						
2. Ambivalent Sexism Inventory (ASI) hostile	.38**					
3. ASI benevolent	.18	.30*				
Explicit gender beliefs						
4. Gender authority beliefs	.31**	.19	.11			
5. Gender role beliefs	.12	.06	.09	.57**		
6. Gender stereotypes	–.08	.05	.03	.18	.06	
7. Feminist identification	–.26*	–.25*	–.14	.01	.06	.15

NOTE: Correlations are partial, controlling for participant gender ($df = 66$).
*$p < .05$. **$p < .01$.

GAM, $r(66) = –.26$, $p < .05$, and to ASI Hostile, $r(66) = –.25$, $p < .05$. Thus, individuals who identified with feminists and career women were less likely to report prejudice against female authorities and antifemale attitudes. No other significant relations emerged.

Relationships Among Implicit Measures

Contrast scores. For the implicit analysis, we used four single-index attitude estimates that reflected both our conceptual definition of implicit prejudice and the reliable interactions shown by the facilitation score data (Wittenbrink et al., 1997). The contrasts we computed, and the effects they represent, are shown in Table 3. The first contrast, female authority prejudice, is the difference between facilitation for negative versus positive adjectives when primes were female authorities. The second index, authority sexism, contrasts attitudes toward female versus male authorities. It reflects the Prime Gender × Valence interaction shown for high-authority primes. The third contrast, relative female authority prejudice, represents the Prime Gender × Prime Authority × Valence interaction. The advantage of this index is that it provides a measure of female authority prejudice relative to attitudes toward all other primes.[9] The fourth and final contrast, implicit sexism, reflects the Prime Gender × Valence interaction found in the three-way ANOVA. It represents more negative attitudes toward female primes compared to male primes. Table 4 presents the first-order correlations among the implicit measures (controlling for participant gender).

Implicit attitude relations. Although each contrast has been uniquely named, the implicit attitude indexes were derived from the same facilitation score data. Therefore, they were somewhat redundant, average $r(67) = .36$.

TABLE 3:   Contrast Weights Used in Priming Task Analysis

	High Authority		Low Authority	
Facilitation Score Contrast	*Female Prime*	*Male Prime*	*Female Prime*	*Male Prime*
1. Female authority prejudice				
Positive adjectives	−1	0	0	0
Negative adjectives	1	0	0	0
2. Authority sexism[a]				
Positive adjectives	−1	1	0	0
Negative adjectives	1	−1	0	0
3. Relative female authority prejudice[b]				
Positive adjectives	−1	1	1	−1
Negative adjectives	1	−1	−1	1
4. Implicit sexism[c]				
Positive adjectives	−1	1	−1	1
Negative adjectives	1	−1	1	−1

a. Prime Gender × Valence interaction for high-authority primes.
b. Prime Gender × Prime Authority × Valence interaction.
c. Prime Gender × Valence interaction (collapsed across authority).

TABLE 4:   First-Order Correlations Among Implicit Attitude and Explicit Measures

	Implicit Attitudes			
Measure	*Female Authority Prejudice*	*Authority Sexism*	*Relative Female Authority Prejudice*	*Implicit Sexism*
Implicit gender beliefs				
Gender authority	.38**	.28*	.27*	.25*
Gender role	.14	.15	.01	.26*
Gender stereotypes	−.12	−.11	−.07	−.27*
Explicit measures				
Gender and Authority				
Measure (GAM)	.14	.15	.09	.11
Ambivalent Sexism				
Inventory (ASI) hostile	.23	.18	.13	.21
ASI benevolent	.12	−.08	.20	.31**
Gender authority	.21	.18	.14	.19
Gender role	.17	.03	.06	.07
Gender stereotypes	.08	.06	.12	.18
Feminist identification	−.37**	−.15	−.05	−.17

NOTE: Correlations are partial, controlling for participant gender ($df = 66$). Correlations involving implicit measures were computed using log-latency contrast scores. Correlations with untransformed latencies were similar.
$*p < .05$. $**p < .01$.

However, participant gender was unrelated to each measure, all $rs < .15$, *ns*.

Implicit gender belief relations. The relations among the gender authority, gender role, and gender stereotype IATs were examined, controlling for participant gender. As with the explicit measures, implicit gender authority and gender role beliefs covaried, $r(66) = .33$, $p < .01$. This result extends the conceptual link between gender roles and gender authority beliefs to the implicit level (Eagly, 1987). No other significant relations emerged. As with the explicit measures, gender stereotypes were independent of gender role and gender authority beliefs ($rs = .08$ and .14, respectively).

Implicit attitude-belief relations. The top half of Table 4 shows the focal relations among the implicit attitude and gender belief measures. The goal was to examine support for the gender belief hypotheses using response latency methods. As can be seen, the gender authority IAT covaried positively with all four implicit attitude indexes. By contrast, the relations between implicit attitudes and the gender role IAT were unreliably positive, except in the case of implicit sexism. Furthermore, the relations between implicit attitudes and the gender stereotype IAT were unreliably negative, except in the case of implicit sexism.

Consistent with the explicit findings, these results support the gender authority hypothesis. Whether attitudes toward female authorities were considered alone or as a relative index, they were significantly related to implicit gender authority beliefs. By contrast, the gender role and gender stereotype hypotheses were not supported. Instead, implicit gender role beliefs showed weakly positive links and gender stereotypes showed weakly negative links to implicit attitudes toward female authorities.

However, all three gender belief IATs covaried with implicit sexism. Individuals who automatically associated men (more than women) with careers and authority also showed more implicit dislike for women. By contrast, individuals who automatically stereotyped women (more than men) as communal showed less implicit sexism. These findings may reflect greater liking for women on the part of individuals who automatically view them as nice in an implicit version of the "women are wonderful" effect (Eagly & Mladinic, 1993). Nonetheless, gender stereotypes did not favorably influence implicit attitudes toward female authorities, perhaps because nontraditional women are subtyped out of the superordinate, protected category (Glick et al., 1997).

Relationships Among
Implicit and Explicit Measures

The bottom half of Table 4 shows generally weak relations among the implicit attitude and explicit measures, as expected (Greenwald & Banaji, 1995). Specifically, the first-order correlations between the GAM and the four implicit attitude measures ranged from .09 to .15 (average $r = .12$). However, the female authority prejudice index was reliably related to feminist identification, $r(66) = −.37$, $p < .01$, and marginally related to hostile sex-

TABLE 5:   First-Order Correlations Among Implicit Association Test (IAT) and Explicit Measures

Explicit Measure	IAT Measure		
	Gender Authority	Gender Role	Gender Stereotype
Gender authority	.16	.12	.02
Gender role	.02	.09	.20
Gender stereotypes	.22	–.11	.16
Gender and Authority Measure (GAM)	.21	.05	.18
Ambivalent Sexism Inventory (ASI) hostile	.13	.05	.05
ASI benevolent	.30*	.08	.25*
Feminist identification	–.05	.06	–.09

NOTE: Correlations are partial, controlling for participant gender ($df = 66$). Correlations involving implicit measures were computed using log-latency difference scores. Correlations with untransformed latencies were similar.
*$p < .05$. **$p < .01$.

ism, $r(66) = .23$, $p < .09$. These results provide known groups validity for this specific attitude estimate by showing that hostile sexists and feminists were more and less likely, respectively, to show implicit prejudice against female authorities. The relations between feminist identification and ASI Hostile and the remaining attitude indexes (i.e., authority prejudice, relative female authority prejudice, and implicit sexism) were unreliable, all ps > .12. Finally, the implicit sexism index was related to ASI Benevolent, $r(66) = .31$, $p < .01$, suggesting that individuals who endorsed paternalistic attitudes toward women also implicitly disliked women.

Table 5 shows the relationships among the IAT and explicit measures. As can be seen, these relations were nonsignificant, with two exceptions. ASI Benevolent was related to the gender status and gender stereotype IATs, suggesting that benevolent sexists were likely to automatically associate men with high-authority and women with low-authority roles and to implicitly stereotype men as agentic and women as communal.

Construct Validity of Implicit Measures

Because response latency and self-report measures of attitudes and beliefs typically show weak relations (Greenwald & Banaji, 1995), the construct validity of implicit measures may be best assessed using different response latency methods. To date, this strategy has not been tested. The present research uniquely examined the hypothesis that implicit measures assess similar phenomena (i.e., automatic associations in long-term memory). The priming task assessed evaluative associations (i.e., attitudes), whereas the IAT assessed semantic associations (i.e., beliefs). Nonetheless, the conceptual link

between attitudes and beliefs was expected to emerge, and it did, as each implicit attitude index covaried with IAT-assessed gender authority beliefs. Furthermore, the implicit sexism index covaried with each IAT, showing that gender authority, role, and trait associations are each important correlates of generalized, implicit prejudice. The positive relations among implicit sexism, gender role, and gender authority beliefs are consistent with social role theory (Eagly, 1987), because traditional labor divisions are thought to underlie status and prestige differences that evaluatively favor men. The negative relationship between implicit stereotypes and sexism is consistent with research showing that agency-communality beliefs enhance women's overall likability (Eagly & Mladinic, 1993). Taken together, these findings extend basic tenets of social role theory and recent gender attitude research to the implicit level and, in so doing, support the construct validity of both the priming and IAT methods.

Construct Validity of Explicit Attitude Measure

The known groups validity of the GAM was shown by its relations with participant gender, feminist identification, and hostile sexism. Women and individuals who identified with feminists and career women showed less prejudice against female authorities, whereas hostile sexists showed more (Forsythe et al., 1997; Glick et al., 1997). The GAM also was related to explicit gender authority beliefs but not to explicit gender role beliefs or gender stereotypes. This pattern supports the specificity of implicit attitude-belief relations. It is not the case that relations between female authority attitudes and gender role or trait beliefs were undiscoverable using automatic methods. Rather, it appears that these relations did not exist at either the implicit or explicit level. In contrast, specific beliefs linking men to high authority and women to low authority were related to prejudice against female authorities, using both implicit and explicit measures (Fishbein & Ajzen, 1975).

DISCUSSION

To date, response-latency methods have been applied to gender stereotypes (e.g., Banaji & Hardin, 1996; Blair & Banaji, 1996; Rudman et al., 1999) but not to gender attitudes. Attitudes toward female authority were the focus of the present research because of their implications for gender discrimination in the workplace (i.e., preservation of the economic status quo). The assessment strategy included both implicit and explicit attitudes, which showed the predicted dissociation. This dissociation may be due to cognitive (i.e., an inability to access information) (Greenwald & Banaji, 1995) or strategic (i.e., impression management) (Dovidio & Fazio,

1992) explanations. In either case, they underscore the need for both automatic and controlled measures to explore the nuances of attitudes toward female authority.

Individual Differences in Female Authority Attitudes

Consistent with the literature on implicit gender stereotypes, implicit attitudes toward female authorities were similar for men and women (Banaji & Hardin, 1996; Blair & Banaji, 1996; Greenwald & Banaji, 1995). Defining implicit attitudes as the specific contrast between negative and positive facilitation for female authority primes, we found that attitudes toward female authorities were negative for men and women alike and more negative than were attitudes toward the other primes (male authorities, low-authority females, and low-authority males). In contrast, gender differences were shown on the explicit attitude measure, with women reporting less prejudice against female authorities than men. This finding supports a large literature showing that women's explicit attitudes are more egalitarian than are men's (e.g., Glick & Fiske, 1996; Swim et al., 1995; Williams & Best, 1990).

As individual difference measures, feminist identification and hostile sexism performed more consistently. Self-reported feminists showed less explicit prejudice against female authorities (Forsythe et al., 1997) and also less implicit prejudice on the female authority prejudice measure. In contrast, hostile sexists showed more explicit prejudice against female authorities (Glick et al., 1997) and (marginally) more implicit prejudice on the female authority prejudice measure. These findings suggest that feminist identification and antifemale attitudes can have positive and negative effects, respectively, on accepting female authority, both consciously and unconsciously.

Gender Beliefs and Female Authority Attitudes

The primary aim of the research was to discern why men are more readily accepted than women in positions of power. In Eagly et al.'s (1992) meta-analysis of leader evaluations, the authors concluded that female leaders " 'pay a price' in terms of relatively negative evaluations if they intrude on traditionally male domains by . . . occupying male-dominated leadership positions" (p. 18). This finding has serious implications because, beyond leading the local chapter of the Daughters of the American Revolution, female authorities are ipso facto intruding on male territory, historically speaking. Therefore, it is important to uncover correlates of negative reactions to female authority.

Three potential correlates were examined: gender role associations (i.e., beliefs that men and women's social roles differ), gender authority associations (i.e., beliefs that men have more authority than women), and gender stereotypes (i.e., beliefs that men are more agentic than women). Results showed consistent support for the gender authority hypothesis. Associating men with high authority and women with low authority covaried with negative attitudes toward female authority. This was true whether attitudes were measured implicitly or explicitly. Although, on average, women showed less susceptibility to gender authority associations than did men, the relationship between gender authority beliefs and female authority prejudice was similar for both genders, at both the implicit and explicit level.

These findings suggest that negative reactions to female authority may stem, in part, from an implicit prototype for male leaders and the attendant belief that it is more natural for men to take control. Individuals may be comforted by male leadership for the simple fact that they are accustomed to viewing men as authority figures and women as subordinates. Thus, women who occupy male-dominated leadership positions may be disliked—both implicitly and explicitly—because they breach expectancies that men (not women) occupy powerful roles. However, the association between male gender and leadership also is likely to be prescriptive, because a tradition of male authority results in norms of male entitlement (Jost & Banaji, 1994). Thus, female leaders may be disliked for "stepping on men's toes" (i.e., usurping men's position in the hierarchy). In sum, female authorities may be disliked because they are unfamiliar and/or because they are viewed as threatening intruders (Eagly et al., 1992). These interpretations are distinct but undoubtedly related, because the descriptive (what is) and prescriptive (what should be) elements of gender beliefs are intertwined (Glick & Fiske, 1999).

Because gender authority beliefs consistently covaried with attitudes, it is important to note that these beliefs, as assessed by the IAT and self-reports, were unreliably related, $r(66) = .16$, $p = .25$ (see Table 5). This dissociation again bolsters the conceptual distinction between automatic and conscious beliefs. However, it bodes ill for gender equality because it shows that even individuals who possess consciously egalitarian beliefs are susceptible to implicit gender authority beliefs and, hence, implicitly negative female authority attitudes.

In contrast, there was no support for the gender role or gender stereotype hypotheses. That is, gendered associations regarding (a) career versus domestic roles and (b) agentic versus communal traits were unreliably related to implicit and explicit female authority attitudes. However, gender role and gender authority beliefs covaried, using both implicit and explicit mea-

sures, consistent with arguments that the traditional division of labor (career vs. domestic) connotes high- versus low-status expectancies for men and women, respectively (Eagly, 1987).

Surprisingly, gender role and authority beliefs were negligibly related to gender stereotypes, for both implicit and explicit measures (cf. Eagly & Steffen, 1984). This finding may reflect the extent to which the stereotype has taken on a life of its own (i.e., is no longer dependent on labor divisions). However, this does not explain why the stereotype did not predict attitudes toward female authorities. One possibility is that the agency-communality distinction may be less important than other gender stereotypes, depending on the type of female authority being evaluated. For example, reluctance to accept female expertise (e.g., scientists) may be due more to beliefs about men's superior intellect than to their agency. Likewise, legitimate power differences (e.g., policing and judgeships) may be buttressed by beliefs about men's superior strength or reasoning abilities. Future research should examine a broader range of gender stereotypes to assess this possibility. Nonetheless, if authority roles are construed as requiring agency, it was not unreasonable to expect that people who view men as agentic and women as communal might react negatively to female authorities. Instead, people who showed differential gender authority associations reacted negatively to female authorities.

CONCLUSION

Individuals who associate men with high authority and women with low authority are likely to show prejudice against female authorities. Support for this relationship was found using both implicit and explicit measures. The intermethod independence of these measures shows that gender equality may be hindered by both automatic and conscious gender authority associations. That is, the implicit prototype for male authority is also, for some individuals, an explicit prototype, and both carry separate—but equally negative—implications for female authorities. Although tested at both the implicit and explicit level, gender role beliefs and gender stereotypes were unrelated to female authority attitudes. Thus, prejudice against female authority may be due more to associations linking men to power and influence than to role or trait expectancies. In other words, women may be viewed as legitimate careerists, possessed of the agency necessary for flying 747s and performing surgery. However, if they violate expectancies that men (not women) occupy powerful roles, their authority in the cockpit or the operating room may not be welcomed.

APPENDIX
The Gender and Authority Measure

1. If I were in serious legal trouble, I would prefer a male to a female lawyer.
2. The people I look up to most are women.[a]
3. I would feel more comfortable if the pilot of an airplane I was traveling on were male.
4. I would rather be stopped by a woman police officer (vs. a man).[a]
5. I probably prefer that the U.S. president is a man, versus a woman.
6. In general, I would rather work for a man than for a woman.
7. If I were having a serious operation, I would have more confidence in a male surgeon.
8. When it comes to politics, I would rather vote for women than for men.[a]
9. For most college courses, I prefer a male professor to a female professor.
10. Personally, I would rather go to a male doctor than a female doctor.
11. In general, women make better leaders than men do.[a]
12. In most areas, I would rather take advice from a man than from a woman.
13. In general, I would rather take orders from a man than from a woman.
14. If I were being sentenced in court, I would prefer that the judge be a woman.[a]
15. In general, I feel more comfortable when a man (vs. a woman) is in charge.

a. Items require reverse scoring.

NOTES

1. The adjectives' valence scores were derived from Williams and Best's (1990) favorability norms. On this scale, scores greater than 500 reflect positive valence, whereas scores less than 500 reflect negative valence. The adjectives' gender association scores were derived from Williams and Best's (1990) Sex Stereotype Index. On this scale, scores greater than 500 reflect association with male gender, whereas scores less than 500 reflect association with female gender.

2. These pictures consisted of men and women shown in both traditional and nontraditional roles. Pictures of women included an aerobics instructor, housewife, telephone operator, architect, construction worker, and paramedic. Pictures of men included a businessman, bartender, college student, telephone operator, model, and typist.

3. The scale was first administered to a sample of 191 respondents (84 men, 107 women). Respondents also completed traditional and contemporary measures of sexism (Glick & Fiske, 1996; Spence & Helmreich, 1972) and a measure of social desirability (Paulhus, 1984). Exploratory factor analysis of the Gender and Authority Measure (GAM) suggested a single factor structure, and the internal consistency for the combined scale was adequate ($\alpha = .88$). The pilot study revealed significantly higher scores for men than women and reliably positive relationships with the sexism measures, average $r = .32$, all ps < .001. Thus, the scale showed evidence of both known groups and convergent validity. Its relationship to both the impression management and self-deception subscales of the Balanced Inventory of Desirable Responding (BIDR) (Paulhus, 1984) was nonsignificant, suggesting discriminant validity.

4. We thank Tony Greenwald and Scott Tiernan for providing us with stimuli for this Implicit Association Test (IAT).

5. Pilot respondents ($N = 32$) rated a list of 20 traits (10 agentic, 10 communal) on three semantic differential dimensions of good-bad, harmful-harmless, and positive-negative. In addition, they rated the extent to which each trait was more associated with men versus women. The agentic and communal traits used in the gender stereotype IAT (and explicit gender stereotype measure, described below) were selected on the basis of this pretest to be similar in valence but different in stereotypic association.

6. Nonorthogonally, key assignment for Step 2 also was counterbalanced. For example, participants who performed the female + agency task first also pressed the left key for agentic words and the right key for communal words in Step 2.

7. An unexpected Prime Authority × Valence × Participant Gender interaction also emerged, $F(1, 67) = 4.73$, $p < .05$. The Prime Authority × Valence interaction was reliable for women ($p = .01$). Specifically, women showed more positive facilitation for low-authority primes compared to high-authority primes, $t(67) = 3.13$, $p < .01$, whereas their negative facilitation scores for these primes were similar ($t < 1.00$). By contrast, analysis of the men's data showed only a main effect for valence, such that men's negative facilitation scores were greater than their positive facilitation scores ($p < .001$). These findings suggest a positivity bias toward low-status targets on the part of women and a generalized negativity bias on the part of men. Because these unexpected effects are peripheral to the present article's focus, we will not discuss them. Participant gender did not reliably interact with other variables, all $ps > .09$.

8. This finding is consistent with past research showing that the evaluative connotations of judgments influence sex differences in implicit gender stereotypes (Rudman et al., 1999). Because high-authority roles are more valued than low-authority roles, women's implicit self-esteem may inhibit them from making judgments that connote inferiority for their gender (see also Greenwald et al., in press).

9. We thank an anonymous reviewer for this suggestion.

REFERENCES

Ashmore, R. D., Del Boca, F. K., & Bilder, S. M. (1995). Construction and validation of the Gender Attitude Inventory, a structured inventory to assess multiple dimensions of gender attitudes. *Sex Roles, 32*, 753-785.

Banaji, M., & Greenwald, A. G. (1995). Implicit gender stereotyping in judgments of fame. *Journal of Personality and Social Psychology, 68*, 181-198.

Banaji, M. R., & Hardin, C. D. (1996). Automatic stereotyping. *Psychological Science, 7*(3), 136-141.

Berger, J., Fisek, M. H., Norman, R. Z., & Zelditch, M., Jr. (1977). *Status characteristics and social interaction: An expectations states approach.* New York: Elsevier Science.

Blair, I. V., & Banaji, M. R. (1996). Automatic and controlled processes in stereotype priming. *Journal of Personality and Social Psychology, 70*, 1142-1163.

Breckler, S. J. (1984). Empirical validation of affect, behavior, and beliefs as distinct components of attitude. *Journal of Personality and Social Psychology, 47*, 1191-1205.

Carli, L., & Eagly, A. H. (in press). Gender effects on social influence and emergent leadership. To appear in G. N. Powell (Ed.), *Handbook of gender in organizations.* Thousand Oaks, CA: Sage.

Cohen, J. (1988). *Statistical power for the behavioral sciences.* Hillsdale, NJ: Lawrence Erlbaum.

Dovidio, J. F., & Fazio, R. H. (1992). New technologies for the direct and indirect assessment of attitudes. In J. M. Tanur (Ed.), *Questions about questions: Inquiries into the cognitive bases of surveys* (pp. 204-237). New York: Russell Sage.

Eagly, A. H. (1987). *Sex differences in social behavior: A social role interpretation.* Hillsdale, NJ: Lawrence Erlbaum.

Eagly, A. H., & Karau, S. J. (1991). Gender and the emergence of leaders: A meta-analysis. *Journal of Personality and Social Psychology, 60*, 685-710.

Eagly, A. H., Makhijani, M. G., & Klonsky, B. G. (1992). Gender and the evaluation of leaders: A meta-analysis. *Psychological Bulletin, 111*, 3-22.

Eagly, A. H., & Mladinic, A. (1993). Are people prejudiced against women? Some answers from research on attitudes, gender stereotypes, and judgments of competence. In W. Stroebe & M. Hewstone (Eds.), *European review of social psychology.* New York: John Wiley.

Eagly, A. H., & Steffen, V. J. (1984). Gender stereotypes stem from the distribution of men and women into social roles. *Journal of Personality and Social Psychology, 46*, 735-754.

Eagly, A. H., & Wood, W. (1991). Explaining sex differences in social behavior: A meta-analytic perspective. *Personality and Social Psychology Bulletin, 17*, 306-315.

Fazio, R. H., Jackson, J. R., Dunton, B. C., & Williams, C. J. (1995). Variability in automatic activation as an unobtrusive measure of racial attitudes. A bona fide pipeline? *Journal of Personality and Social Psychology, 69*, 1013-1027.

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behavior: An introduction to theory and research.* Reading, MA: Addison-Wesley.

Forsythe, D. R., Heiney, M. M., & Wright, S. S. (1997). Biases in appraisals of women leaders. *Group Dynamics, 1*, 98-101.

French, J., Jr., & Raven, B. (1959). The bases of social power. In D. Cartwright (Ed.), *Studies in social power* (pp. 150-167). Ann Arbor: University of Michigan.

Gallup, G. H. (1996). *The Gallup poll.* Wilmington, DE: Scholarly Resources.

Glick, P., Diebold, J., Bailey-Werner, B., & Zhu, L. (1997). The two faces of Adam: Ambivalent sexism and polarized attitudes toward women. *Personality and Social Psychology Bulletin, 23*, 1323-1334.

Glick, P., & Fiske, S. T. (1996). The Ambivalent Sexism Inventory: Differentiating hostile and benevolent sexism. *Journal of Personality and Social Psychology, 70*, 491-512.

Glick, P., & Fiske, S. T. (1999). Sexism and other "isms": Interdependence, status, and the ambivalent content of stereotypes. In W. B. Swann, J. H. Langlois, & L. A. Gilbert (Eds.), *Sexism and stereotypes in modern society: The gender science of Janet Taylor Spence* (pp. 193-221). Washington, DC: American Psychological Association.

Greenwald, A. G., & Banaji, M. R. (1995). Implicit social cognition: Attitudes, self-esteem, and stereotypes. *Psychological Review, 102*, 4-27.

Greenwald, A. G., Banaji, M. R., Rudman, L. A., Farnham, S. D., Nosek, B. A., & Rosier, M. (in press). Prologue to a unified theory of attitudes, stereotypes, and self-concept. To appear in J. P. Forgas (Ed.), *Feeling and thinking: The role of affect in social cognition and behavior.* New York: Cambridge University Press.

Greenwald, A. G., McGhee, D., & Schwartz, J.L.K. (1998). Measuring individual differences in implicit cognition: The Implicit Association Test. *Journal of Personality and Social Psychology, 74*, 1464-1480.

Heilman, M. E. (1983). Sex bias in work settings: The lack of fit model. *Research in Organizational Behavior, 5*, 269-298.

Heilman, M. E., Block, C. J., Martell, R. F., & Simon, M. C. (1989). Has anything changed? Current characterizations of men, women, and managers. *Journal of Applied Psychology, 74*, 935-942.

Henderson-King, D., & Stewart, A. J. (1997). Feminist consciousness: Perspectives on women's experience. *Personality and Social Psychology Bulletin, 23*, 415-426.

Johnson, P. (1976). Women and power: Toward a theory of effectiveness. *Journal of Social Issues, 32*, 99-110.

Jost, J. T., & Banaji, M. R. (1994). The role of stereotyping in system-justification and the production of false-consciousness. *British Journal of Social Psychology, 33*, 1-27.

Lyness, K., & Thompson, D. (1997). Above the glass ceiling? A comparison of matched samples of female and male executives. *Journal of Applied Psychology, 82*, 359-375.

Moore, G., & Shackman, G. (1996). Gender and authority: A cross-national study. *Social Science Quarterly, 77*, 274-288.

Paulhus, D. L. (1984). Two-component models of socially desirable responding. *Journal of Personality and Social Psychology, 46,* 598-609.

Reskin, B. F., & Ross, C. E. (1992). Jobs, authority, and earnings among managers. *Work and Occupations, 19,* 342-65.

Rubner, M. B. (1991). More workers prefer a man in charge. *American Demographics, 13,* 11.

Rudman, L. A. (1997). *Gender and authority attitudes.* Unpublished manuscript.

Rudman, L. A., Greenwald, A. G., & McGhee, D. E. (1999). *Self-esteem and gender identity are manifest in implicit gender stereotypes.* Manuscript submitted for publication.

Rudman, L. A., Greenwald, A. G., Mellott, D. S., & Schwartz, J.L.K. (in press). Measuring the automatic components of prejudice: Flexibility and generality of the Implicit Association Test. *Social Cognition.*

Sonnert, G., & Holton, G. (1996). Career patterns of women and men in the sciences. *American Scientist, 84,* 63-71.

Spence, J. T., & Helmreich, R. (1972). The Attitudes Toward Women Scale: An objective instrument to measure attitudes toward the rights and roles of women in contemporary society. *JSAS Catalog of Selected Documents in Psychology, 2,* 66. (a)

Swim, J. K., Aikin, K. J., Hall, W. S., & Hunter, B. A. (1995). Sexism and racism: Old-fashioned and modern prejudice. *Journal of Personality and Social Psychology, 68,* 199-214.

Vianello, M., & Siemienska, R. (1990). *Gender inequality: A comparative study of discrimination and participation.* Newbury Park, CA: Sage.

Watson, C. (1988). When a woman is the boss: Dilemmas in taking charge. *Group and Organization Studies, 13,* 163-181.

Williams, J. E., & Best, D. L. (1990). *Measuring sex stereotypes: A multination study.* Newbury Park, CA: Sage.

Wittenbrink, B., Judd, C. M., & Park, B. (1997). Evidence for racial prejudice at the implicit level and its relationship with questionnaire measures. *Journal of Personality and Social Psychology, 72,* 262-274.

Wright, F. (1976). The effects of style and sex of consultants and sex of members in self-study groups. *Small Group Behavior, 7,* 433-456.

Wright, E. O., & Baxter, J. (1995). The gender gap in workplace authority: A cross-national study. *American Sociological Review, 60,* 407-435.