

Who's in Charge? Effects of Situational Roles on Automatic Gender Bias

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Sixty European American male and female participants' implicit gender-related attitudes were assessed prior to engaging in a cross-gender dyadic interaction, according to one of three situational roles (superior, subordinate, or equal-status partner). Results revealed that the social roles affected male participants' gender attitudes. Specifically, male participants who anticipated an interaction with a female superior revealed negatively biased evaluative attitudes about women. By contrast, males who expected to interact with a female equal-status partner or subordinate revealed attitudes that were biased in favor of women. This finding highlights the importance of situational factors in the generation of implicit attitudes regarding social groups. Specifically, the present data point to the influence of situational status on males' attitudes regarding women. Implications of this work for integration and diversity initiatives are discussed.

INTRODUCTION

Over the past 40 years there have been considerable increases in the representation of individuals from different racial and ethnic groups, as well as the presence of women, in a variety of social arenas. Social-psychological theory, such as the contact hypothesis (Allport, 1954), predicts that such inclusion should, in turn, lead to the attenuation of intergroup tension.

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Ironically, these advances in numerical representation have been accompanied by several side effects for both members of stigmatized groups and members of nonstigmatized groups (Blalock, 1967; Kanter, 1977; Yoder, 1991). For example, members of stigmatized groups report feeling frustrated by barriers to successful promotion, being filtered into stereotypical roles, and being kept out of prestigious positions in their organizations (Brass, 1985; Catalyst, 1996; Mehra, Kilduff, & Brass, 1998). Further, members of nonstigmatized groups report finding newly diversified workplaces difficult to navigate (Kanter, 1993), and feeling less committed to them (Tsui, Egan, & O'Reilly, 1992). Thus, diversity initiatives can sometimes have unexpected effects, exacerbating, rather than reducing, tension.

Why would the presence of members of stigmatized groups increase intergroup tension in the workplace? In 1967, Blalock hypothesized that the sudden increase of members of underrepresented groups into work environments would be perceived by members of majority groups as an "intrusion," and, as a result, would increase bias. Sociological research on the group-position theory of prejudice (Blumer, 1998) has also revealed that high-status group members' attitudes toward low-status groups become increasingly negative as perceived threats to the status of the high-status group increase—as when minority group members occupy high-status positions (Bobo, 1998). This work suggests that majority group members' attitudes toward minority groups become increasingly negative as more minority group members occupy social roles that are incongruent with their sociocultural status.

The purpose of the present study was to examine this process from a social-cognitive perspective, at a micro level of analysis. Do individuals' implicit attitudes toward an outgroup vary according to their social roles vis-à-vis individual outgroup members? We examined male and female participants' reactions to being assigned the role of a superior, peer, or subordinate, relative to a person of the opposite gender. Consistent with group-position theory, we predicted that males (i.e., dominant group members) assigned to a low-status role relative to an outgroup member (i.e., female partner) would exhibit more negative attitudes regarding women, compared to males assigned to a high-status role. By contrast, women's gender attitudes were not expected to differ as a function of their relative status for an anticipated interaction with an outgroup member (i.e., male partner).

Assessing Attitudes

Because of their strong associations with group memberships, stereotypes and attitudes can often be activated automatically and implicitly (e.g., Banaji & Greenwald, 1995; Bargh, Chaiken, Govender, & Pratto, 1992;

Devine, 1989; Fazio, Jackson, Dunton, & Williams, 1995). For example, Fazio et al. (1995) demonstrated the automatic activation of racial attitudes. Specifically, White participants respond faster to negative target adjectives when they were preceded by primes that were African American faces, compared to when they were preceded by Euro-American faces. Presumably because participants held negative attitudes toward African Americans, it was easier for them to process, and, therefore, to respond to adjectives that were also negative (i.e., congruent with the valence of the prime), compared to processing negative adjectives preceded by Euro-American faces.

Based on the same logic, Greenwald and his colleagues have developed the Implicit Association Test (IAT) to assess the strength with which individuals associate concepts and categories with attributes (e.g., evaluations and traits, see Greenwald, McGhee, & Schwartz, 1998 for more details). In the IAT, individuals categorize items belonging to particular concepts/categories (e.g., male and female names) as well as items belonging to the attribute of interest (e.g., pleasant and unpleasant words for an evaluation attribute) that are presented on a computer screen by pressing specific keys on a keyboard. Research employing this methodology has found that individuals complete the categorization task more quickly when highly associated concepts and attributes are procedurally linked (i.e., by sharing a response key), compared to when weakly associated concepts and attributes are similarly linked (again, see Greenwald et al., 1998; Ottaway, Hayden, & Oakes, in press). For instance, because most individuals hold fairly positive attitudes toward flowers and fairly negative attitudes toward insects, most find it easier to categorize flower names and pleasant words when they require the same key press for categorization (and, therefore, insect names and unpleasant words when they require the same key press), than when the procedural links are reversed (i.e., flower names and unpleasant words paired; insect names and pleasant words paired, Greenwald et al., 1998; Ottaway et al., in press). Similar to Fazio et al.'s method (Fazio et al., 1995), therefore, the IAT is sensitive to the differential association of concepts and categories with positive and negative evaluations.

Recent work has found that the IAT can detect differences in the evaluations of social groups, such as racial and gender groups (Banaji, 1999; Carpenter & Banaji, 1998, 1999; Dasgupta, McGhee, Greenwald, & Banaji, 2000; Greenwald et al., 1998; Lowery, Hardin, & Sinclair, in press; Ottaway et al., in press; Rudman & Kilianski, 2000). For instance, Greenwald et al. (1998, Exp. 2) found that Korean and Japanese participants revealed in-group favoritism in an IAT measuring response latencies for categorizations of Korean and Japanese first names and pleasant/unpleasant words. When Korean first names and "pleasant" words required the same key press

for categorization, Korean participants responded faster than when Korean names and "unpleasant" words required the same key press. Japanese participants showed the same trend, but with Japanese names instead of Korean names. Thus, Korean participants showed a bias in favor of Korean first names and Japanese participants showed a bias in favor of Japanese first names (Greenwald et al., 1998, Exp. 2). Similarly, Dasgupta et al. (2000) found that Whites associated "pleasant" words and Caucasian names and faces more readily than "pleasant" words and African American names and faces.² These results were interpreted as evidence for White participants' implicit racial bias, that is, their automatic preference for White Americans over African Americans.³ Several other studies have also found evidence for White Americans' automatic racial bias (Greenwald et al., 1998, Exp. 3; Lowery et al., in press; Ottaway et al., in press). In the present study, we employed the IAT to assess the gender attitudes held by both males and females. Further, we examined whether individuals' automatic gender bias differed after assignment to status-congruent, compared to status-incongruent, roles for a cross-gender dyadic interaction.

To examine the impact of social roles on gender attitudes, it is important first to consider the attitudes generally held regarding women. Unlike attitudes regarding other stigmatized groups (e.g., African Americans, the obese), attitudes regarding women have been found to be surprisingly positive (Eagly & Mladinic, 1989). But this positive bias in favor of women may not extend to women in nontraditional roles. Attitudes toward women in leadership positions are often quite negative (Eagly, Makhijani, & Klonsky, 1992; Glick & Fiske, 1996). Recent theoretical work on the social psychology of Sexism suggests that certain forms of modern Sexism exclude women from high-status roles (e.g., leaders, employers), as well as protect and revere women in traditional roles (e.g., mothering, nurturing), without the antipathy often associated with prejudice. Thus, individuals may simultaneously hold positive attitudes about women, yet negative attitudes about women who take on nontraditional, high-status roles. Consistent with this work, the subcategory "female leaders" was found to evoke different automatic attitudes from the general category "females" (Carpenter & Banaji, 1998). Specifically, male participants revealed an implicit preference for women in an IAT when classifying male and female names, but not when classifying names of

²The stimuli used were names that had been pretested to be stereotypically associated with White Americans or Black Americans, or faces of White and Black Americans.

³It is possible that these findings were due to the fact that White names and faces are generally more familiar for White Americans than Black names and faces. Since familiarity is associated with greater liking or preference, these results could reflect such a bias. However, recent work equalizing the familiarity of the stimulus items suggests that the IAT effects are not due to differential familiarity (Dasgupta et al., 2000).

famous male and female leaders (Carpenter & Banaji, 1998). Taken together, this work suggests that counter-stereotypical exemplars of a particular social group (e.g., female leaders) may be associated with different attitudes than more stereotypical members of that group (Rudman, 1998). It follows, then, that anticipating an interaction with a counter-stereotypical token member of a social group may shift attitudes regarding the group as a whole.

The Present Study

We investigated the influence of anticipated interactions with a target group member in an atypical social role on implicit attitudes regarding the target group. Consistent with previous work finding in-group favoring attitudes (Greenwald et al., 1998), female participants were expected to reveal an automatic favorability for female over male. We had no strong predictions regarding how situational roles might moderate the magnitude of female participants' in-group bias. The question of primary interest, however, was whether attitudes regarding women would differ among males who were anticipating working on a task with a female superior, subordinate, and equal-status task partner. Given the findings that males revealed an automatic bias against female, compared to male, leaders (Carpenter & Banaji, 1998), and that high-status group members feel threatened when low-status group members take on atypical roles (Bobo, 1998), we expected males assigned to the subordinate role to generate attitudes regarding women that were more negative than males assigned to the superior role. Consistent with recent work finding that males hold relatively positive attitudes regarding women when they anticipate working with them on a joint-task (Rudman, 1998), we expected males assigned to the equal-status role to generate more positive attitudes regarding women than males in the superior role.

METHOD

Participants and Design

Thirty European American⁴ male and 30 European American female undergraduate students at a competitive, exclusive, private New England college completed this experiment for a monetary reward of \$5. The design was a 2 (participant gender) \times 3 (situational role) factorial.

⁴The race of participants was kept consistent to protect against the potential influence that differences in racial group membership might have on perceptions of relative status.

Procedure

Upon arrival to the laboratory, each participant was greeted by a same-race, same-gender experimenter, escorted into a room in which there was a desk and a computer, and seated in a chair away from the computer. Participants were told, "We are interested in how work environments are responding to the increased use of computers in group assignments, projects, and tasks. Thus, in the course of the study you will be working interactively on a computer task with a fellow student." Participants were led to believe that there was another student who was simultaneously being prepared to participate in the study as their partner. They then read and signed a consent form prior to continuing with the study.

Introduction of Dyadic Role

Next, each participant was assigned a situational role for the task: (1) the role of the *superior*; (2) the role of a *task partner of equal status*; or (3) the role of the *subordinate*. In addition, participants were led to believe that their partners were assigned the role in complement to the one that they were assigned (see Appendix A).

Introduction of Partner

After roles were induced, participants were told that "it is sometimes helpful to have some information about someone before having to work with them." They were then given an Employee Profile Sheet to complete on which to indicate specific biographical characteristics, including their name, race, sex, class (in school), activities, hobbies, and interests. After participants completed the profile sheet, a Polaroid picture was taken of them.

The experimenter then gave the participants a completed Employee Profile Sheet that, presumably, had been completed by their interaction partner, as well as an accompanying Polaroid photograph of their "partner." Next, the experimenter instructed participants to review their partner's profile sheet, and indicated that their completed profile sheet would be taken to a nearby room for their partner to review. All participants were shown a Polaroid of a European American college-age student who attended a different university. Male participants were shown a photograph of a female student, and female participants were shown a photograph of a male. To ensure generalizability beyond a single target male or female, the photograph was randomly selected from stimulus photographs of two females

or two males. Additionally, the partner profile sheet was fabricated and experimentally controlled. The profile sheets and photographs served several purposes: (1) to convince the participants that they would be interacting with another student; (2) to ensure that the participants knew the gender of their partner, and knew that their partner had the same information about them; and, finally, (3) to reinforce the role manipulation—the appropriate role was prominently marked at the top of each profile sheet. After a few minutes, the experimenter returned and asked participants if they were ready to begin working on the computer task.

Implicit Association Test (IAT)

The IAT provided the dependent variables of the study. When participants indicated that they were ready to begin, they were told, “As you know, we are studying computer-based task performance. Thus, you and your superior (subordinate or partner) will be working on a computer-based task. In order for us to get a more accurate measure of team performance, you and your superior (subordinate or partner) will be given a chance to work on the task separately to get a baseline, as well as to give you both an opportunity to practice. Afterwards, you will work on the task together and interactively.” Next, they moved to the desk, in front of a Compaq Presario microcomputer with a 14 in. monitor. The experimenter told the participant, “The task that you will be working on is a word-categorization task. The instructions will be presented by the computer.” The experimenter then booted the IAT program and left the room.

The IAT assesses the ease with which categories are associated (see Greenwald et al., 1998 for details). All instructions and stimuli were presented by the computer. The IAT included four key blocks of trials during which stimulus words were presented and participants were required to identify to which of four categories (i.e., Male, Female, Pleasant/Good, or Unpleasant/Bad) each word belonged (see Appendix B). For instance, the name “Brian” would be categorized as belonging to the category Male by pressing an appropriate key (either a green key or red key marked on the keyboard). Incorrect responses were not allowed by the computer. In Phases 1 and 2 of the IAT, participants discriminated between Pleasant/Good and Unpleasant/Bad stimulus words, and Male and Female stimulus words, respectively. During Phases 3 and 4, the dual-categorization phases, participants simultaneously discriminated between words belonging to all four of the categories. In one block of these “dual-categorization phases,” participants pressed the same response key to indicate that a stimulus word belongs to either the category Male or the category Good, and a different key to indicate that a stimulus word belongs to either the category Female

or the category Bad. We subsequently refer to this phase as, *Male-Good*. In a second dual-categorization phase, the appropriate response keys for one set of categories is reversed, such that the same key is used to indicate that a stimulus word belongs to either the category Female or the category Good, whereas the other key is used to indicate that a word belongs to either the category Male or the category Bad. We refer to this second dual-categorization scheme as, *Female-Good*.⁵

The difference between response latencies during Phase 3 and response latencies during Phase 4, therefore, indicates the degree to which an individual favors one category over the other (i.e., Male versus Female, Greenwald et al., 1998). For instance, suppose individuals complete the dual-categorization phase (composed of 40–50 trials) faster when the instructions require them to press the same key to respond that a stimulus word (e.g., Alice) belongs to the category Female or that a stimulus word (e.g., sunshine) belongs to the category Good (Female-Good), compared to the dual-categorization phase in which they must press the same key to indicate that a stimulus word is a member of the category Male or a member of the category Good (Male-Good). Such a difference in completion latencies during these the two dual-categorization phases indicates an automatic gender bias in favor of female over male.

In addition to the attitudes IAT, participants also completed a second IAT⁶ assessing automatic associations between gender categories (i.e., male and female names) and the trait, “competence.” Specifically, participants categorized stimulus words as belong to the categories Male, Female, Competent, or Incompetent (see, again, Appendix B). Similar to the attitude IAT, described above, the competence IAT consisted of four key phases, two of which were the critical dual-categorization response phases of 50 trials each. That is, in one dual-categorization phase, participants pressed the same key to indicate that a word was a synonym of Competent or a female name, and pressed a different key to indicate that a word was a synonym of Incompetent or a male name. That is, Female and Competent were procedurally linked, and Male and Incompetent were procedurally linked. In a second dual-categorization phase, gender and competence categories were linked in the reverse manner—Female was paired with Incompetent, and Male was paired with Competent.

⁵The order of procedural linking (counter-stereotypical, stereotypical) was counter-balanced across participants. Thus, for half the participants the first dual-categorization phase had gender and evaluation categories linked stereotypically (i.e., Male-Bad/Female-Good), and for the other half, the first dual-categorization phase had gender and evaluation categories linked counter-stereotypically (i.e., Male-Good/Female-Bad).

⁶Rudman and Kilianski (2000) reported that the order of presentation of IAT did not seem to influence responses.

The primary purpose of the gender-competence IAT was to differentiate gender attitudes (i.e., the strength of association between gender group membership and evaluative categories) from the strength of association between gender groups and stereotypes (i.e., competence). Although gender attitudes have sometimes been found to be biased in favor of women, women are stereotyped to be incompetent (Fiske, 1998). Thus, male participants' automatic associations between gender categories and the trait "competence" (automatic gender stereotyping) were expected to be the reverse of their attitudes. Women were not expected to subscribe to stereotypical associations between gender and competence. We did not, however, have specific predictions for the effect of situational status on the magnitude of automatic gender stereotyping generated by either male or female participants. After completing both IATs, participants were paid, debriefed, and thanked for their participation.⁷

RESULTS

Automatic Gender Attitudes

The response latencies from the critical dual-categorization phases (i.e., Male-Good/Female-Bad and Male-Bad/Female-Good) were used to assess gender attitudes. The data were trimmed in accordance with Greenwald et al. (1998), and all response latencies were log-transformed. The log-response times associated with trials during the Male-Good category pairing condition were averaged, and the log-response times associated with trials during the "Female-Good" category pairing condition were averaged for each participant. These log-latencies were then subjected to a 2 participant gender (Male, Female) by 3 role (superior, partner, subordinate) \times 2 dual-categorization phase (Male-Good/Female-Bad, Male-Bad/Female-Good) factorial ANOVA with repeated measures on the last factor. Consistent with previous research (Carpenter & Banaji, 1998, 1999; Eagly & Mladinic, 1989), participants were expected to demonstrate a preference for women in their implicit gender attitudes. As diagrammed in Fig. 1,⁸ there was a main effect of the dual-categorization phase on participants' response latencies [$F(1, 52) = 75.7, p < .0001, r = .77$].⁹ Participants completed the trials

⁷Data were collected as part of a larger project examining several cognitive dynamics of cross-gender dyadic interactions.

⁸For ease of presentation, response latencies in the figures have been retransformed to milliseconds.

⁹Because several of the evaluative words may have been more strongly associated with males or females, response times to trials in which positive and negative words were relatively stereotypically of males and females have been omitted from these analyses. Specifically, in

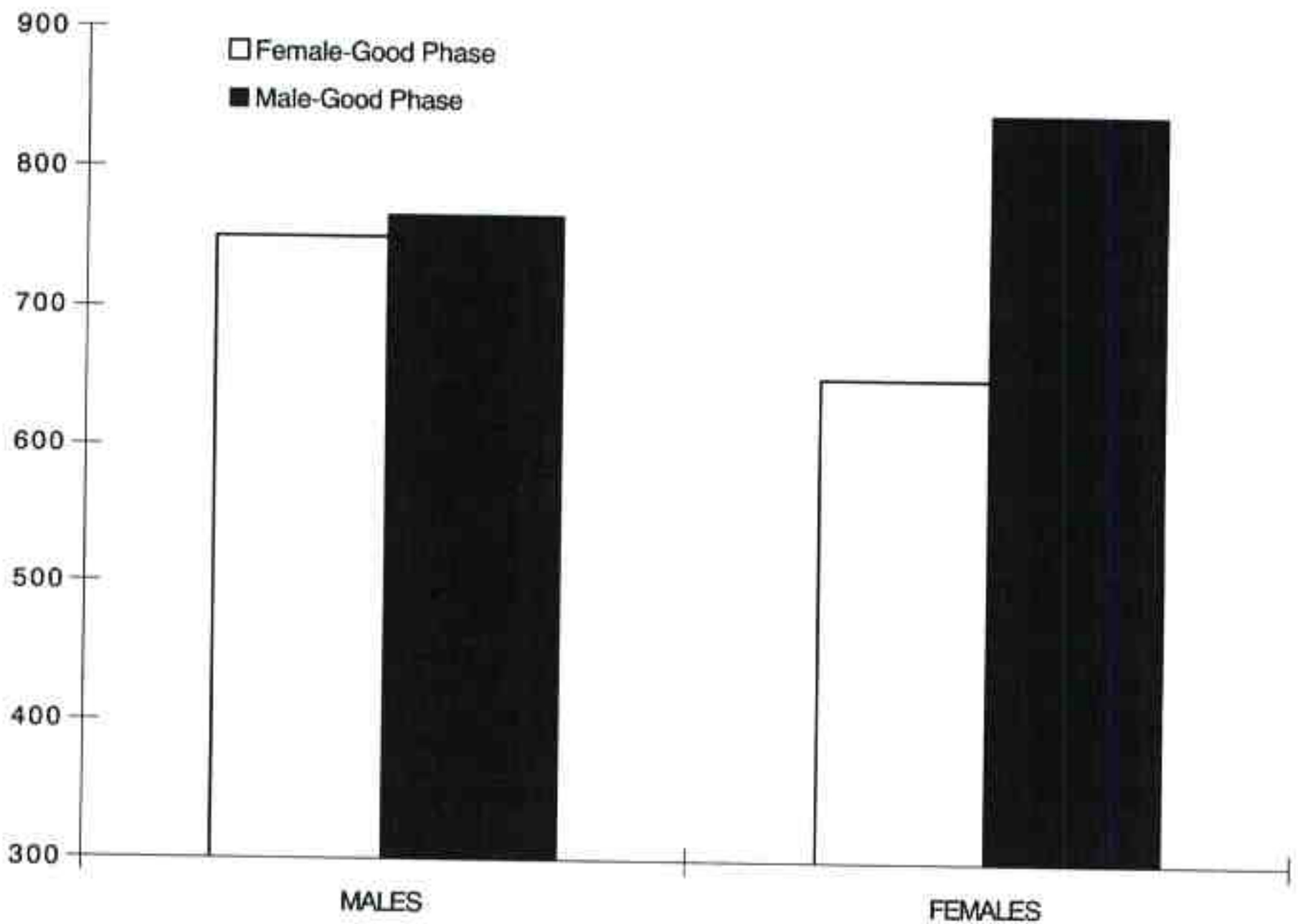


Fig. 1. Automatic gender attitudes by participant gender.

faster during the Female-Good dual-categorization phase compared to the Male-Good phase, suggesting an automatic gender bias in favor of women. Interestingly, an interaction between participant gender and categorization phase [$F(1, 52) = 34.7, p < .0001, r = .63$] suggested that female participants revealed an attitude bias [$F(1, 26) = 131.6, p < .0001, r = .91$], but not male participants [$F(1, 26) = 2.16, p = .15, r = .38$]. The mean log-response latencies for both male and female participants are reported in Table I.

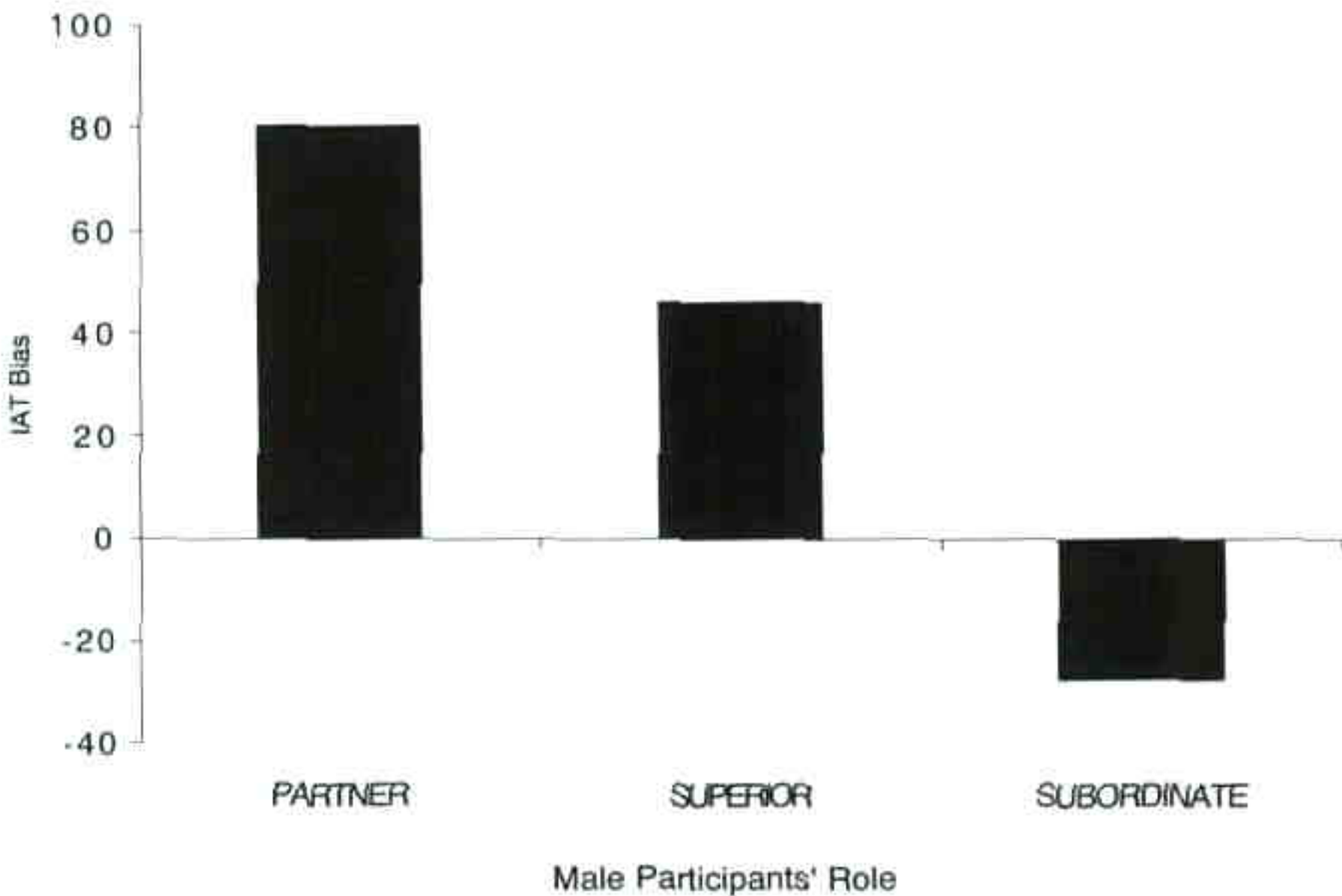
The primary question of the present study, however, was whether male participants' attitudes would be moderated by their situational roles. We predicted that male participants in the role of the subordinate to a female would generate attitudes regarding women that were more negative than males in

order to be confident that our attitude IAT was, indeed, measuring attitudes rather than stereotypes, response latencies to the following words were excluded: "snuggle, caress, cuddle, killer, brutal, and assault." The results with all words in the analyses, however, were quite consistent with those reported in the manuscript. The main effect of category pairing revealed, $F(1, 57) = 85.86, p < .0001, r = .78$. The interaction between gender and pairing was $F(1, 52) = 34.42, p < .0001, r = .63$, with female participants revealing a greater attitude bias than male participants [$F(1, 26) = 153.3, p < .0001, r = .92$, and $F(1, 26) = 4.48, p = .04, r = .38$, for males and females, respectively].

Table 1. Mean Log-Response Latencies by Participant Gender and Category Pairing Phase

	Male-Good/ Female-Bad		Male-Bad/ Female-Good		Male-Competent/ Female-Incompetent		Male-Incompetent/ Female-Competent	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Male participants	2.87	.04	2.85	.06	2.84	.06	2.89	.07
Female participants	2.89	.05	2.79	.05	2.86	.08	2.80	.08

the role of superiors, whereas males in the role of equal-status task partners would reveal more favorable attitudes. To examine differences in the favorability of male participants' attitudes directly, each participants' mean response latency during the Male-Bad/Female-Good category phase was subtracted from their mean response latency during the Male-Good/Female-Bad category phase. Participants' difference scores are diagrammed in Fig. 2. A planned contrast examining whether participants in the superior role revealed attitudes toward women that were less favorable than those held by participants in the equal-status role, but more favorable than those revealed by participants in the subordinate role, reached conventional levels of

**Fig. 2.** Influence of situational roles on male participants' gender bias.

statistical significance, $t(26) = 2.08$, $p = .02$, $r = .38$.¹⁰ As shown in Fig. 2, not only did male participants in the role of the subordinate fail to demonstrate a bias in favor of women in their implicit gender attitudes, male participants in the role of equal-status task partners revealed a larger attitudinal preference than males in the superior role. Social roles had no influence on female participants' implicit gender attitudes [$F(2, 26) = 0.37$, $p = .69$].

Automatic Gender Stereotyping

Participants' response latencies for the critical dual-categorization phases of the gender-competence IAT were trimmed in a similar manner to the gender attitudes IAT and previous research (Greenwald et al., 1998). Each participant had two scores: (1) the average log-latency when male names were paired with Competent, and, therefore, female names were paired with Incompetent; and (2) the average log-latency when female names were paired with Competent and male names were paired with Incompetent. These scores were subjected to the same $2 \times 3 \times 2$ ANOVA described above.

Given the free-standing stereotypes regarding gender and competence, male participants were expected to respond more quickly during trials in which the categories Female and Incompetent (and thus, Male and Competent) were procedurally linked compared to when the categories Female and Competent were linked. Female participants were not expected to reveal this bias. The means are presented in Table I. Results were as predicted. There was a substantial gender by category pairing interaction [$F(1, 53) = 39.19$, $p < .0001$, $r = .65$]. Male participants responded faster to the stimulus words when gender categories and competence categories were paired stereotypically (i.e., male paired with Competent and female paired with Incompetent), compared to when the same categories were paired counter-stereotypically (i.e., male paired with Incompetent and female with Competent) [$F(1, 24) = 13.42$, $p < .002$, $r = .60$]. Interestingly, female participants showed the reverse pattern. Thus, female participants responded more quickly when categories were paired counter-stereotypically, compared to when categories were paired stereotypically [$F(1, 26) = 25.71$, $p < .0001$, $r = .71$]. This result may reflect the fact that the female participants in the present work are highly motivated, competent women attending an exclusive, competitive university. Subscribing to such a domain-relevant, negative stereotype would be maladaptive. Finally, social roles did not influence the competence associations

¹⁰Contrast weights +1, 0, -1 for equal-status, superior, and subordinate roles, respectively. Rosenthal and Rosnow (1991) suggest examining specific questions via the use of planned contrasts, rather than unfocussed F -test comparisons.

[all F s < 0.5]. Hence, these results suggest that male participants in all roles seemed to endorse the stereotype that women are incompetent compared to men, whereas female participants overwhelmingly rejected that stereotype.

DISCUSSION

As the workplace and other venues become increasingly diverse, the attitudes of individuals working and living in those environments are bound to change. Social-psychological research and theory, such as the contact hypothesis (Allport, 1954), predict that attitudes will become less prejudiced. The results of the present work, however, suggest that as members of stigmatized groups move into counter-stereotypical social roles, attitudes may become more negative. The present study found that male participants held favorable evaluative attitudes regarding women, *unless* they were anticipating engaging in an interaction with a female task partner who held a counter-stereotypical role. Specifically, male participants who were anticipating being the subordinate of a female superior revealed relatively negative attitudes regarding women. In contrast, male participants who held the equal-status role revealed the most positive attitudes. Thus, equal-status social interactions with members of stigmatized groups may decrease the bias of members of nonstigmatized groups, but positions in which roles and status are reversed may increase bias. Nevertheless, these results provide strong evidence for the potentially powerful impact that deviations from typical social roles can have on the attitudes of members of high-status, nonstigmatized groups.

Rethinking the Malleability of Automatic Attitudes

Prejudicial attitudes and stereotypical associations undoubtedly are systemic forces that are often activated and applied automatically, without the conscious awareness of the perpetrator (Banaji & Hardin, 1996; Bargh et al., 1992; Bargh, Chen, & Burrows, 1996; Devine, 1989; Dovidio, Kawakami, Johnson, Johnson, & Howard, 1997; Fazio et al., 1995). Recent work has drawn attention to motivational factors that alter both the automatic activation and application of stereotypes (Fein & Spencer, 1997; Kunda & Sinclair, 1999). Our results suggest that contextual factors influence implicit associations (see also Blair, Ma, & Lenton, in press; Lowery et al., in press for similar findings). Specifically, individuals' relative roles in a social context seemed to alter affective associations thought to be linked at an implicit level.

Two possible explanations are offered for these findings. Motivational explanations, such as those articulated in group-position theory (Blumer,

1998) suggest that members of high-status groups become increasingly negative, as they perceive losses to the privileges and gains of their group relative to those of lower-status outgroups (Bobo, 1998). Similarly, Benevolent Sexism theory (Glick & Fiske, 1996) asserts that attitudes regarding women are positive, as long as women maintain roles that are subordinate to males. Accordingly, male participants assigned to subordinate roles relative to female superiors may have perceived their subordinate role as indicative of a threat to the position of their group, and in violation of their beliefs about women's roles. Thus, they revealed more negative attitudes than did males in equal-status and superior roles. A cognitive explanation, on the other hand, suggests that the different roles may have triggered different mental representations of the outgroup, which, in turn, influenced participants' attitudes and associations (Hewstone, Johnston, & Aird, 1992; Inman & Baron, 1996; Kunda & Oleson, 1995). Male participants anticipating an interaction with a female superior may have generated representations of counter-stereotypical, nontraditional women. Previous work indicates that associations with this particular subtype of women are more negative than associations with the broader category of "women" (Carpenter & Banaji, 1998, 1999; Eagly et al., 1992; Rudman, 1998). Accordingly, the attitudes of males in this condition were also negative. Hence, both motivational and cognitive explanations can account for the present findings. Future research is needed to determine the relative contributions of each.

Attitudes Versus Stereotypes

It is interesting that the social role manipulation did not alter participants' stereotypes regarding gender and competence. Irrespective of their roles, both males and females strongly associated their own gender with competence. The result for male participants is consistent with previous work finding that males are more likely than females to implicitly associate male names with high-status occupational roles (e.g., leader, authority) and female names with low-status occupational roles (e.g., clerk, subordinate, Rudman & Kilianski, 2000). The strong stereotypical association between gender and competence may, in fact, contribute to the negative attitudes revealed by men who were presented with women in a high-status role. In the face of such strong stereotypical associations, women in positions of authority might be perceived as undeserving of their high-status roles, and thus, resented when they assume them.¹¹ Nevertheless, the present study is

¹¹We examined the correlations between participants' automatic gender attitudes and automatic gender stereotyping, separately, for male and female participants. Results revealed no correlation for female participants ($r = -.09$), but a moderate correlation for male

consistent with other research noting the negative consequences that members of stigmatized social groups may face when they attempt to take on high-status roles (Richeson & Ambady, *in press*; Rudman, 1998; Rudman & Glick, *in press*).

Limitations

Although the present work contributes to existing theory in social cognition and intergroup relations, there are obvious limitations to the generalizability of the findings. First, the participants in the present work were all students at an extremely competitive university. The attitudes and beliefs held by participants in the present work may differ from other subsets of the population. Another limitation is that the situational influences employed in the present study were anticipatory. The degree to which attitudes in anticipation of an interaction differ from attitudes during or after the completion of an interaction should be investigated. Further, the influence of individuals' relative social roles on their attitudes as a function of repeated interaction may differ from the findings of the present work. For instance, men with female superiors may at first become more biased against women, but after some time, their attitudes may change. On the other hand, it is possible that initial interactions with a female superior may lead to negative attitudes that, in turn, set the tone for all subsequent interactions, whereby attitudes become increasingly biased. In either case, it is important for future research to examine longitudinal effects of situational status-based roles on attitudes. Further, this work investigated the influence of situational roles on the automatic attitudes generated by male and female participants of cross-gender dyadic interactions. Future work should also consider how individuals' automatic attitudes are influenced during same-gender interactions, and, furthermore, how situational roles may moderate the effects of same-gender contexts. Last, although the results of the present work provide strong evidence for the influence of situational factors on automatic attitude activation, it remains unclear precisely how that attitude activation may be related to explicit attitudes and judgments, and the degree to which it predicts behavior. The behavioral correlates and outcomes associated with these automatic attitudes, in particular, need to be explored (Wilson, Lindsey, & Schooler, 1999).

participants that approached significance ($r = .31$, $p = .10$). The greater the favorability for females evidenced by male participants' gender attitudes, the more they tended also to associate *Female with Incompetent and Male with Competent* (i.e., the greater their automatic gender stereotyping). This result is strikingly consistent with Fiske's recent work noting the tendency for individuals to form perceptions of outgroups as either respected or liked, but not both (Fiske, 1998).

Implications

Despite these limitations, the results of the present study have broad implications for how we think about attitudes, and more importantly, attitude change. The results suggest that implicit attitudes may be quite malleable, given the appropriate situation. In particular, this work suggests that reversing the situational status from what is typical in society may be one such situation. In the present research, the attitudes expressed by members of a high-status group were influenced by the reversal of status in the immediate situation from that maintained by society's *status quo*. Specifically, males in the role of a subordinate to a woman seemed to generate attitudes that were more biased against women than males in the role of her superior. The attitudes of members of high-status groups may be linked to the roles they hold in interactions with members of low-status groups. Thus, the present study is consistent with previous work noting the importance of structural factors such as social role status in the maintenance, as well as the attenuation, of stereotyping, prejudice, and discrimination (e.g., Conway & Vartanian, 2000; Jost & Banaji, 1994; Sidanius & Pratto, 1993).

This proposition, however, presents a Catch-22. Attitudes about women may become increasingly biased for males experiencing low-status situational roles during cross-gender interactions (for instance, men with female professors). As attitudes become more negative, resistance to women being allowed access to those high-status roles might increase. Thus, one implication of this work is the need to monitor both the quantitative effects of affirmative action and diversity programs, such as the number of women and minorities in an organization, as well as more qualitative effects, such as the attitudinal climate of the workplace. Consistent with group-position theory, the results of this work suggest that intergroup tensions may increase after the implementation of diversity programs. In other words, attitudes toward lower-status groups will remain favorable, only as long as such groups pose no threat to the *status quo*. Thus, this work highlights some of the complexities and nuances associated with modern forms of prejudice and prejudice reduction. A thoughtful examination of the influence of social roles on automatic attitudes may be paramount for the attenuation of prejudice and social stratification.

APPENDIX A: INSTRUCTIONS FOR THE ROLE CONDITIONS

Superior

You are the superior and your partner is your subordinate. Included in the role of a superior is the job of forming an impression of your subordinates.

Therefore, you will be evaluating your subordinate's task performance. You should make every effort to form an impression of him/her.

Task Partners/Peers

Previous research has shown that peers who have worked together for some time and get along do better on such tasks. Hence, as it will help your performance, you should make every effort to get along with your task partner.

Subordinate

You are the subordinate and your partner is your superior. Included in the role of a subordinate is being evaluated. Therefore, your superior will be evaluating your task performance. As your partner's subordinate, you should make every effort to manage the impression you are making.

APPENDIX B

Stimulus Words Used in IATs

Pleasant/Good	Unpleasant/Bad	Male	Female	Competent	Incompetent
Caress ^a	Abuse	Adam	Carol	Productive	Stupid
Cuddle ^a	Agony	Allen	Alice	Efficient	Slow
Glory	Assault ^a	Andrew	Amanda	Talented	Unfit
Gold	Brutal ^a	Craig	Betsy	Smart	Unsuitable
Health	Corpse	Bernard	Diane	Capable	Stumbling
Joy	Death	Daniel	Gloria	Proficient	Unqualified
Kindness	Failure	David	Judy	Skilled	Inept
Lucky	Filth	George	Kathy	—	—
Peace	Killer ^a	Frank	Katie	—	—
Snuggle ^a	Poison	Howard	Rachel	—	—
Success	Slime	Larry	Sharon	—	—
Sunrise	Slum	Mark	Rosie	—	—
Talent	Stink	Kevin	Tracey	—	—
Triumph	Torture	Michael	Tina	—	—
Warmth	Vomit	Patrick	Sara	—	—
—	—	Richard	Donna	—	—
—	—	Steven	Ellen	—	—
—	—	Tommy	Jennifer	—	—

Note. IAT = Implicit Association Test.

^aResponses to these stimulus items were omitted from analyses (see Footnote 9).

ACKNOWLEDGMENTS

This research was supported by a National Institute of Mental Health Grant (#MH12212-01A1), a National Science Foundation Grant (#9616761),

a PECASE Award from the National Science Foundation (BCS-9733706), and a Gordon Allport Memorial Fund Grant from the Harvard University Department of Psychology. The authors would like to thank Anthony Greenwald for the Implicit Association Test software program, as well as Heather Gray for her comments on a previous version of this manuscript, Mahzarin Banaji and Anthony Greenwald for providing the stimulus words used in the IATs, and Chiwen Bao, Sarah Baskin, and Christopher Menick, for their assistance with data collection and stimulus preparation. We also thank Timothy Wilson and two anonymous reviewers for their comments on a previous draft of this manuscript. Portions of this manuscript were included in Jennifer Richeson's doctoral dissertation.

REFERENCES

- Allport, G. (1954). *The nature of prejudice*. Reading, MA: Addison-Wesley.
- Banaji, M. R. (1999, October). *Implicit preferences*. Invited address delivered at the 1999 meeting of the New England Social Psychological Association, Hanover, NH.
- Banaji, M. R., & 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. (1996). Automatic gender stereotyping. *Psychological Science*, *7*, 136–141.
- Bargh, J. A., Chaiken, S., Govender, R., & Pratto, F. (1992). The generality of the automatic attitude activation effect. *Journal of Personality and Social Psychology*, *62*, 893–912.
- Bargh, J. A., Chen, M., & Burrows, L. (1996). Automaticity of social behavior: Direct effects of trait construct and stereotyping activation on action. *Journal of Personality and Social Psychology*, *71*, 230–244.
- Blair, I. V., Ma, J. E., & Lenton, A. P. (in press). Imagining stereotypes away: The moderation of implicit stereotypes through mental imagery. *Journal of Personality and Social Psychology*.
- Blalock, H. (1967). *Toward a theory of minority relations*. New York: Wiley.
- Blumer, H. (1998). Race prejudice as a sense of group position. In M. W. Hughey (Ed.), *New tribalisms: The resurgence of race and ethnicity* (pp. 31–40). New York: New York University Press.
- Bobo, L. (1998). Race, interests, and beliefs about affirmative action: Unanswered questions and new directions. *American Behavioral Scientist*, *41*, 985–1003.
- Brass, D. L. (1985). Men and women's networks: A study of interaction patterns and influence in an organization. *Academy of Management Journal*, *28*, 327–343.
- Carpenter, S., & Banaji, M. R. (1998, April). *Implicit attitudes and behavior toward female leaders*. Paper presented at the annual meeting of the Midwestern Psychological Association, Chicago, IL.
- Carpenter, S., & Banaji, M. R. (1999, April). *Implicit attitudes toward female leaders*. Poster presented at the annual meeting of the Midwestern Psychological Association.
- Catalyst. (1996). *The 1996 Catalyst census of the women board of directors of the Fortune 500*. New York: Catalyst.
- Conway, M., & Vartanian, L. R. (2000). A status account of gender stereotypes: Beyond communality and agency. *Sex Roles*, *43*, 181–199.
- Dasgupta, N., McGhee, D. E., Greenwald, A. G., & Banaji, M. R. (2000). Automatic preference for White Americans: Eliminating the familiarity explanation. *Journal of Experimental Social Psychology*, *33*, 316–328.
- Devine, P. G. (1989). Stereotypes and prejudice: Their automatic and controlled components. *Journal of Personality and Social Psychology*, *56*, 5–18.

- Dovidio, J. F., Kawakami, K., Johnson, C., Johnson, B., & Howard, A. (1997). On the nature of prejudice: Automatic and controlled processes. *Journal of Experimental Social Psychology*, 30, 510–540.
- 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. (1989). Gender stereotypes and attitudes toward women and men. *Personality and Social Psychology Bulletin*, 15, 543–558.
- 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.
- Fein, S., & Spencer, S. J. (1997). Prejudice as self-image maintenance: Affirming the self through negative evaluations of others. *Journal of Personality and Social Psychology*, 73, 31–44.
- Fiske, S. T. (1998). Stereotyping, prejudice, and discrimination. In D. T. Gilbert & S. T. Fiske (Eds.), *The handbook of social psychology* (Vol. 2, pp. 357–411). Boston, MA: McGraw-Hill.
- Glick, P., & Fiske, S. T. (1996). The ambivalent sexism inventory: Differentiating hostile and benevolent sexism. *Journal of Personality and Social Psychology*, 70, 491–512.
- Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. K. (1998). Measuring individual differences in implicit cognition: The implicit association task. *Journal of Personality and Social Psychology*, 74, 1464–1480.
- Hewstone, M., Johnston, L., & Aird, P. (1992). Cognitive models of stereotype change: II. Perceptions of homogeneous and heterogeneous groups. *European Journal of Social Psychology*, 22, 235–249.
- Inman, M. L., & Baron, R. S. (1996). The influence of prototypes on perceptions of prejudice. *Journal of Personality and Social Psychology*, 70, 727–739.
- Jost, J., & 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.
- Kanter, R. M. (1977). *Men and women of the corporation*. New York: Basic Books.
- Kanter, R. M. (1993). Men and women: Equal partners? *Executive Excellence*, 10, 8–10.
- Kunda, Z., & Oleson, K. C. (1995). Maintaining stereotypes in the face of disconfirmation: Constructing grounds for subtyping deviants. *Journal of Personality and Social Psychology*, 68, 565–579.
- Kunda, Z., & Sinclair, L. (1999). Motivated reasoning with stereotypes: Activation, application, and inhibition. *Psychological Inquiry*, 10, 12–22.
- Lowery, B. S., Hardin, C. D., & Sinclair, S. S. (in press). Social tuning effects on automatic racial prejudice: Social influence effects on automatic racial prejudice. *Journal of Personality and Social Psychology*.
- Mehra, A., Kilduff, M., & Brass, D. J. (1998). At the margins: A distinctiveness approach to the social identity and social networks of underrepresented groups. *Academy of Management Journal*, 41, 441–456.
- Ottaway, S. A., Hayden, D. C., & Oakes, M. A. (in press). Implicit attitudes and racism: The effect of word familiarity and frequency in the Implicit Association Test. *Social Cognition*.
- Richeson, J. A., & Ambady, N. (in press). When roles reverse: Stigma, status, and self-evaluation. *Journal of Applied Social Psychology*.
- Rosenthal, R., & Rosnow, R. L. (1991). *Essentials of behavioral research* (2nd ed.). New York: McGraw-Hill.
- Rudman, L. A. (1998). Self-promotion as a risk factor for women: The costs and benefits of counterstereotypical impression management. *Journal of Personality and Social Psychology*, 74, 629–645.
- Rudman, L. A., & Glick, P. (in press). Prescriptive gender stereotypes and backlash toward agentic women. *Journal of Social Issues*.
- Rudman, L. A., & Kilianski, S. E. (2000). Implicit and explicit attitudes toward female authority. *Personality and Social Psychology Bulletin*, 26, 1315–1328.

- Sidanius, J., & Pratto, F. (1993). The inevitability of oppression and the dynamics of social dominance. In P. Sniderman & P. Tetlock (Eds.), *Prejudice, politics, and the American dilemma* (pp. 173–211). Palo Alto, CA: Stanford University Press.
- Tsui, A. S., Egan, T. D., & O'Reilly, C. A. (1992). Being different: Relational demography and organizational attachment. *Administrative Science Quarterly*, *37*, 549–579.
- Wilson, T. D., Lindsey, A., & Schooler, T. Y. (1999). A model of dual attitudes. *Psychological Review*, *107*, 101–126.
- Yoder, J. D. (1991). Rethinking tokenism: Looking beyond numbers. *Gender and Society*, *5*, 178–192.