

Stereotype Threat in Men on a Test of Social Sensitivity

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This study provides evidence of stereotype threat in men on a test of a feminine ability called social sensitivity, that is, the ability to decode nonverbal cues. Men who were told that the test assessed social sensitivity and produced better scores for women than men performed worse on the test than did men who were told that the test assessed information processing. Because social sensitivity can be an automatic skill and stereotype threat uses mental capacity, this effect was moderated by self-reported strategy usage. Men's performance worsened in the threat condition only when they reported more deliberative and less intuitive strategies for decoding nonverbal cues.

KEY WORDS: stereotype threat; gender; social sensitivity; automatic process.

Theorists define stereotype threat as a state of self-evaluative threat, whereby anxiety about confirming a negative stereotype in others' eyes, or in one's own, produces behavior that is consistent with and confirms the stereotype (Steele, 1997; Steele & Aronson, 1995; for a review see Steele, Spencer, & Aronson, 2002). Stereotype threat is usually explained as assimilation to a negative group-relevant stereotype through motivational processes (Wheeler & Petty, 2001). Theoretically, stereotype threat can happen to anyone with a group identity laden with a negative stereotype, even if the group is historically advantaged or of high status (Steele & Aronson, 1995). Thus, men, as a high status group, should show stereotype threat when they are presented with the negative stereotype that men are not as socially sensitive as women, an ability ordinarily operationalized as the ability to decode others' nonverbal cues.

In general, there are many demonstrations of performance decrements when members of a stereotyped group are reminded of or threatened by a negative stereotype. For example, women were threatened by gender stereotypes on math ability tests (e.g., Keller, 2002; Spencer, Steele, & Quinn, 1999),

African-Americans by racial stereotypes on intelligence tests (e.g., Steele & Aronson, 1995), Latina women by ethnic stereotypes on intelligence and spatial ability tests (e.g., Gonzales, Blanton, & Williams, 2002), and low socioeconomic status individuals by social class stereotypes on intelligence tests (e.g., Croizet & Claire, 1998).

There is also evidence that nonstigmatized, high status, advantaged groups, such as White men, can show performance decrements when threatened by negative stereotypes. These negative stereotypes include the superiority of Asians to Whites in mathematics (e.g., Aronson et al., 1999; Smith & White, 2002) and Blacks to Whites in athletic domains (e.g., Stone, Lynch, Sjomeling, & Darley, 1999). Stereotype threat studies using these stereotypes involved racial comparisons that theoretically have negative consequences for both White men and White women.

There are also a few demonstrations of stereotype threat in men on the basis of gender stereotypes. For example, Leyens, Désert, Croizet, and Darcis (2000) found that men who were reminded that men are not as good as women in processing affective information made more errors in classifying affective than nonaffective words in a lexical decision task than did men who were not reminded of this stereotype. Men have also been threatened on a verbal analogies test (Keller & Bless, 2003) and

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on a golf-putting task (by the claim that women are better short game players than men are; McConnell, Beilock, Rydell, Jellison, & Carr, 2004).

Although these studies do indeed show that stereotype threat can occur in men, the abilities used by Leyens et al. (2000) and McConnell et al. (2004) were not explicitly shown to have a feminine stereotype. The negative stereotype may not have been well known by the participants and thus may have lacked validity. These abilities are also somewhat specialized because they are not frequently used skills. In addition, Leyens et al. (2000) and McConnell et al. (2004) showed stereotype threat only in particular segments of the population (students specializing in psychology and expert golfers, respectively). Thus, these studies do not make a strong case that threat on the basis of gender stereotypes commonly has negative consequences for a majority of men in the natural environment.

In the current study, we extended the study of stereotype threat in men to a domain that has more obvious daily life consequences. Social sensitivity, or the ability to interpret accurately the expressive behavior of others and to decode others' nonverbal cues, is an aspect of social intelligence or social competence (Archer, Costanzo, & Akert, 2001). Social sensitivity is a skill used by everyone in daily conversation. Thus, stereotype threat on a social sensitivity test has the potential to affect virtually all men.

For stereotype threat to occur on a social sensitivity test, men need to think that women are better at encoding and decoding nonverbal communications than men are. Women are in fact perceived by both men and women to be more fluent, skilled, and involved communicators, whereas men are perceived as louder, more restless, and less skilled (Briton & Hall, 1995). The feminine stereotype for social sensitivity is also to some extent true. Meta-analysis of accuracy in decoding nonverbal cues revealed a mean effect size (d) of 1.02 in favor of women for visual plus auditory modes of communication (Hall, 1978). The test of social sensitivity used in the current study, the Interpersonal Perception Task-15 (Costanzo & Archer, 1993a, 1993b) also typically shows a sex difference³ that favors women (Costanzo & Archer, 1989, 1993b; Smith, Archer, & Costanzo, 1991; but see Patterson, Foster, & Bellmer, 2001; Patterson

& Stockbridge, 1998). Therefore, much like abilities such as mathematics that have been used in past stereotype threat research with women (e.g., Spencer et al., 1999), social sensitivity is an ability on which women stereotypically and actually excel relative to men.

Unlike the cognitive skills used in other stereotype threat studies, social sensitivity may involve relatively automatic processes (see Gilbert, Pelham, & Krull, 1988; Winter, Uleman, & Cunniff, 1985). Consistent with this claim, Ambady and Gray (2002) found that sad or depressed individuals, who have a more analytical cognitive style than happy individuals (e.g., Bless, Bohner, Schwarz, & Strack, 1990), performed worse on tests of social sensitivity than did those in a happy mood. If participants in whom a sad mood was induced were forced to use a more intuitive strategy by increased cognitive load, however, they performed better than sad participants without cognitive load.

Research also suggests that there are two strategies for performing well on a social sensitivity task. Although neither strategy may be better overall, Patterson and Stockbridge (1998) found that participants under cognitive load performed better on a social sensitivity test when they were told to use an intuitive or automatic strategy but worse when they were told to use a deliberative or less automatic strategy. When under cognitive load, use of an intuitive strategy benefited participants because reading nonverbal cues is a relatively automatic process. In contrast, cognitive load compromised deliberative, thoughtful processing, which resulted in poorer social sensitivity performance. In sum, social sensitivity is a skill that can be performed successfully through a variety of strategies. These strategies seem to work similarly for men and women, given the null effects of sex of participant in Patterson and Stockbridge's (1998) study.

The automatic nature of social sensitivity becomes important for tests of stereotype threat because stereotype threat may create cognitive load. Research has shown that the negative stereotype activation needed for threat to occur reduces working memory capacity and triggers a disruptive mental load, which mediates the effect of stereotype threat (Croizet et al., 2004; Schmader & Johns, 2003). Hence, to the extent that social sensitivity is an automatic process, it may not be subject to stereotype threat effects. In fact, research has shown that automatic or proceduralized skills are not affected by stereotype threat manipulations, whereas tasks with high working memory demands are (McConnell

³In this article, the terms *sex* and *sexes* denote the grouping of people into female and male categories. The terms *sex differences* and *similarities* are applied to describe the results of comparing these two groups. The term *gender* refers to the meanings that societies and individuals ascribe to these female and male categories.

et al., 2004). Thus, only if our participants use a relatively deliberative strategy should the stereotype threat manipulation affect men's social sensitivity performance.

In summary, we designed this study to evoke stereotype threat in a general population of men on a feminine task that is useful in daily life. In addition, we chose the ability of social sensitivity, which stereotypically and actually shows a sex difference, in order to parallel studies that showed stereotype threat with women in math domains. We hypothesized that men would perform worse on a social sensitivity test when the negative group stereotype that men are less socially sensitive than women is salient. In addition, the strategies participants use to be socially sensitive were expected to moderate stereotype threat effects. Specifically, men who report using a deliberative strategy were expected to be more susceptible to threat, whereas men who report using an intuitive strategy were expected to be less susceptible to threat.

METHOD

Pretest of the Gender Stereotypicality and Task Importance of Social Sensitivity

To make sure that social sensitivity was indeed perceived as stereotypically feminine among the population of students from which our sample was drawn, we asked 173 men and 301 women to rate how likely it is that women or men would do better on a test of social sensitivity using a 7-point scale that ranged from "men do better" to "women do better" with the scale midpoint labeled "men and women are equal." In this pretest sample both men and women rated social sensitivity as producing a difference favoring women ($M = 5.73$, $SD = 0.85$), significantly above the scale midpoint, $t(478) = 44.76$, $p < .001$. A sex of participant difference was also found, such that women ($M = 5.85$, $SD = 0.75$) rated social sensitivity as producing a larger difference favoring women than men did ($M = 5.54$, $SD = 0.95$), $t(472) = 3.96$, $p < .001$. We also asked these students to compare the ability of women and men on "complex information processing," which is the ability that represented the test in the control condition of this study. We hoped that this ability would eliminate the perception of a difference favoring women, and it did. Complex information processing was perceived as producing a slight difference favoring men in our

pretesting: on the same scale described above, $M = 3.74$, $SD = 0.91$; $t(478) = -6.26$, $p < .001$, for difference from the scale midpoint of 4. Paralleling the sex of participant difference in the stereotype of social sensitivity, men ($M = 3.36$, $SD = 0.90$) thought that men would do better on a test of complex information processing to a greater extent than women did ($M = 3.96$, $SD = 0.83$), $t(472) = -7.38$, $p < .001$.

Because stereotype threat occurs more strongly when individuals identify with the tested domain or perceive the domain as important (Steele, 1997; Steele et al., 2002), we also asked a subset of this sample, 94 men and 151 women, to rate the importance of social sensitivity. This sample rated social sensitivity as relatively important ($M = 5.50$, $SD = 1.42$) on a 7-point scale that ranged from "not at all important" to "very important" and as higher than the scale midpoint, $t(245) = 16.66$, $p < .001$. Women ($M = 5.83$, $SD = 1.14$) thought that the ability was more important than men did ($M = 5.00$, $SD = 1.64$), $t(243) = 4.69$, $p < .001$. Thus, the student population saw social sensitivity as a valuable, important ability that produces a difference favoring women.

Participants

Participants for the main study were 52 men and 61 women from a private midwestern university. They had a wide range of majors and received course credit in introductory psychology for their participation. They had a mean age of 18.83 years ($SD = 1.04$) and 68% were European American, 17% Asian American, 7% African American, 3% Hispanic, and 4% other. Because of the cultural idiosyncrasies of the social sensitivity test, participants were preselected to be U.S. citizens and native English speakers.

Procedure

Participants came into the lab individually for a 1-h session, conducted by one of four female experimenters. The random assignment of each man or woman to either a threat or nonthreat condition created a 2 (participant sex: male, female) \times 2 (threat condition: nonthreat, threat) factorial design.⁴ To

⁴A manipulation of motivation was also included in this study. In general, participants in the high motivation condition were told the test predicts success in life and that they would receive feedback about their performance at the end of the session. The low motivation condition excluded these statements. However, the motivation manipulation check was not significant, $p = .47$, and

manipulate threat, participants first read and heard a few descriptive statements about the test they were about to take. Then all the participants read the general directions for the social sensitivity test and took the test. Finally, participants filled out a post-test questionnaire that measured strategy usage,⁵ as well as other potential moderators or mediators of the stereotype threat effect (e.g., perceived ability, nervousness, and perceived effort) that did not predict social sensitivity performance in this study. Participants were then debriefed and thanked for their time.

Threat Manipulation

The threat and nonthreat conditions differed in the description of the test, the statement of a sex difference, and the indication of participants' own sex on the answer sheet. In the threat condition the test was described as a measure of social sensitivity, or "how well people accurately understand the communication of others and the ability to use subtle nonverbal cues in everyday conversations." In the nonthreat condition the test was described as a measure of complex information processing, or "how well people process different kinds of information accurately."

To increase identification with the test and perceptions of task importance, in both conditions the ability was said to be relevant in everyday life, either "to predict other people's actions and reactions as well as their thoughts and feelings" (for social sensitivity) or "to understand and interpret our environment" (for complex information processing). All of this information was written on the first page of the test packet that was given to the participants and read aloud by the experimenter.

In the threat condition, the experimenter casually added the information that men do not do as well as women on the test: "We've been using this test for a couple of quarters now. It's 15 questions long and, not surprisingly, men do worse than women." The nonthreat condition omitted the last clause of this oral statement. The participants in the threat condition also indicated their sex and age on the top cor-

ner of the test answer sheet, as a reminder that the stereotype could apply to them.

Measures

Social Sensitivity Test

Costanzo and Archer's (1993a, 1993b) Interpersonal Perception Task-15 (IPT-15), a shortened version of the full 30-item IPT, served as the test of social sensitivity. The IPT-15 is a 20-min., 15 question multiple-choice task. It was designed to assess accuracy in interpreting the expressive behavior of others (Costanzo & Archer, 1989). The IPT-15 presents short video segments (video plus audio) of people in real situations, each of which is followed by an objective, multiple choice question that asks about the correct interpretation of the scene. The scenes deal with a variety of topics, including relationships, deception, status, and competition. An example of an item that deals with relationships is a scene showing a woman and a man having a conversation with two children, a boy and a girl. The corresponding question asks, "Who is the child of the two adults?" Respondents have to choose whether the boy, girl, or both are the children of the two adults. As another example, deception items show the same individual twice, once telling the truth and once lying, and participants have to mark in which scene the person is deceiving them.

Strategies

The post-test questionnaire included six questions that asked participants about the strategies they used to answer the IPT-15 questions. These items were factor analyzed using principal axis factor analysis with promax rotation (see Russell, 2002), which resulted in two scales with three items each: an intuitive strategy scale ($\alpha = .53$) and a deliberative strategy scale ($\alpha = .62$). The intuitive strategy scale included the items: "How often were you using your first impression of the situations when you answered the video questions?," "How often were you using your intuitions when you answered the video questions?," and "How often were you following a 'hunch' or using vague feelings when you answered the video questions?" The deliberative strategy scale included the items: "How often could you have told someone else the reason why you answered

social sensitivity performance was not affected by this manipulation. Therefore, the results were collapsed across the motivation conditions.

⁵Because our strategy usage variables were assessed after the stereotype threat manipulation had taken place, we sought to investigate the effects of this manipulation on strategy usage. Reports of strategy usage and the strategy usage difference index did not significantly vary by threat condition, $ps > .33$.

the questions they way you did?,” “How often were you using principles of behavior or rules of communication when you answered the video questions?,” and “How often were you analyzing the details of the situations when you answered the video questions?” These two strategies were uncorrelated, $r(111) = -.11, p = .26$.

To streamline the analyses, a strategy usage difference index was calculated by subtracting the mean score on the intuitive scale from the mean score on the deliberative scale. Thus, lower scores on this strategy usage difference index indicate a predominately intuitive strategy, and higher scores indicate a predominately deliberative strategy.

Threat Manipulation Check

Using a 7-point scale anchored by “men would do better” and “women would do better,” with 4 marked as equal performance, participants indicated whether men or women would do better in general on a test such as the one they took.

Demographics

In the last section of the questionnaire, participants indicated their sex, race, age, college major, citizenship, and whether English was their first language.

RESULTS

Manipulation Check

As expected, a 2 (participant sex: male, female) \times 2 (threat condition: nonthreat, threat) analysis of variance (ANOVA) on the threat manipulation check item showed only the expected threat main effect, $F(1, 109) = 7.52, p = .007$, whereby participants believed that women would do better than men on the test to a greater extent in the threat condition ($M = 5.79, SD = 0.75$) than in the nonthreat condition ($M = 5.37, SD = 0.84$).

Performance

The same ANOVA design calculated on performance on the social sensitivity test showed

Table I. Mean Social Sensitivity Performance by Participant Sex and Threat Condition

Participant sex	Nonthreat			Threat		
	Mean	SD	n	Mean	SD	n
Men	10.31 _a	1.69	26	9.38 _b	1.75	26
Women	9.83 _{a,c}	1.51	30	10.45 _c	1.43	31

Note. Means in a row or column with different subscripts indicate significant differences, $p < .05$.

a nonsignificant main effect for participant sex, $F(1, 109) = .98, p = .33, d = 0.18$, and a significant participant sex \times threat interaction, $F(1, 109) = 6.60, p = .01$ (see Table I). The simple effects of threat within each sex showed that men performed worse in the threat condition than they did in the nonthreat condition, $F(1, 105) = 4.38, p = .04$, whereas women’s performance did not differ in the threat condition and the nonthreat condition, $F(1, 109) = 2.31, p = .13$. The simple effects of participant sex within each threat condition showed that men performed significantly worse than women in the threat condition, $F(1, 109) = 6.37, p = .01$, whereas men and women performed similarly in the nonthreat condition, $F(1, 109) = 1.24, p = .27$.

Moderation of Performance by Strategy

Regression analysis predicted performance from participant sex (coded 0 = male, 1 = female), threat condition (coded 0 = nonthreat, 1 = threat), strategy usage difference index, and all interactions of these three variables. As expected, participants’ self-reported strategies for responding to the social sensitivity test moderated the effects of stereotype threat, as shown by the significant participant sex \times threat \times strategy usage interaction, $B = 0.98, t(105) = 2.33, p = .02, \beta = .43$. Other significant predictors were a threat condition main effect, $B = -1.02, t(105) = -2.32, p = .02, \beta = -.32$; a participant sex \times threat interaction, $B = 1.64, t(105) = 2.75, p = .007, \beta = .45$; and a threat \times strategy usage interaction, $B = -0.68, t(105) = -2.32, p = .02, \beta = -.43$. No other effects were significant.

To decompose the three-way interaction, we plotted performance as a function of participant sex and threat condition at three levels of strategy usage (see Fig. 1). Tests of the simple slopes revealed a negative relationship only for men in the threat condition, $B = -0.49, t(105) = -2.42, p = .02, \beta = -.43$, which indicates that as men used more deliberative

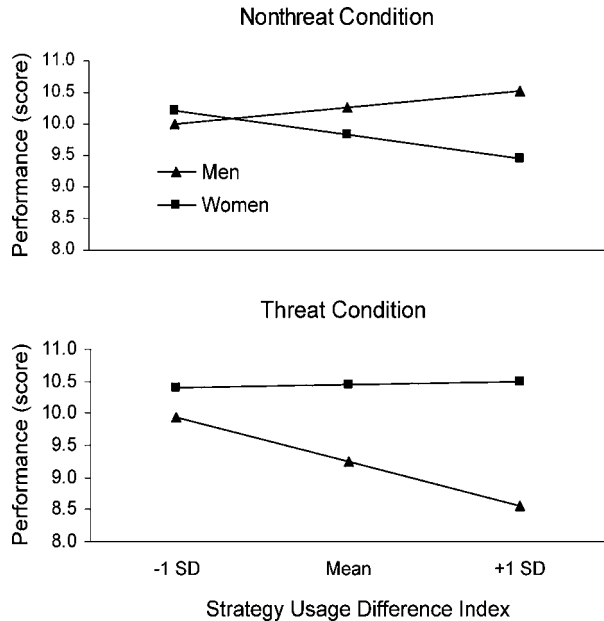


Fig. 1. Mean social sensitivity performance by participant sex and threat condition at three levels ($-1 SD$, the mean, and $+1 SD$) of the strategy usage difference index. $-1 SD$ = greater use of intuitive compared to deliberative strategies; $+1 SD$ = greater use of deliberative compared to intuitive strategies.

strategies they performed worse when threatened. The other simple slopes were not significantly different from zero, all $ps > .23$.

DISCUSSION

The manipulation check showed that our stereotype threat manipulation did indeed make participants believe that women would perform better than men on the test. On the social sensitivity test, the predicted participant sex \times threat interaction was significant: men's performance was worse in the threat condition than in the nonthreat condition, whereas women's performance was somewhat, but not significantly, better in the threat condition than in the nonthreat condition. Thus, the activation of a negative stereotype for men decreased their performance and produced a stereotype threat effect.

Women's small increase in performance in the threat condition can be interpreted as stereotype lift or boost because the explicit activation of the negative masculine stereotype in women could have resulted in either awareness of the negative outgroup stereotype (i.e., stereotype lift; Walton & Cohen, 2003) or the implicit activation of the opposing pos-

itive ingroup stereotype (i.e., stereotype boost; Shih, Ambady, Richeson, Fujita, & Gray, 2002). However, the weakness of this effect is consistent with previous research that showed that it has typically not been significant within a study, although the effect is reliable when examined across studies (Walton & Cohen, 2003).

Men's lowered performance in the threat condition was also moderated by strategy usage. Although neither strategy predicted better performance overall, as men's self-reports indicated that they were using a more deliberative strategy and a less intuitive strategy (i.e., as the difference between the two strategies became larger), their performance became worse in the threat condition. This effect did not occur for men in the nonthreat condition or for women in either condition. This result is consistent with our hypothesis that a more deliberative strategy increased vulnerability to stereotype threat on a social sensitivity test. Because this result occurred only with greater use of the deliberative strategy than the intuitive strategy, it suggests that stereotype threat may have reduced men's cognitive capacity, which influenced men's performance negatively only when they were using a more deliberative strategy and not when they were using a more intuitive strategy.

Because self-reports of strategies have limitations (Nisbett & Wilson, 1977), future researchers should examine other measures of automatic processes in decoding nonverbal cues, such as reaction times, to substantiate these findings. Also informative would be manipulations of strategies (see Patterson & Stockbridge, 1998), which would avoid reliance on self-reported strategies.

In summary, stereotype threat can occur in men on feminine gender-typed abilities used in daily life. When the negative group stereotype that men are not as good as women at decoding nonverbal cues was salient, men performed worse on a social sensitivity test. These results extend past research on stereotype threat in men by using a pretested stereotype and a general task, which parallels most stereotype threat research that demonstrates similar effects for women and other minority groups on important everyday activities such as mathematics or intelligence in general. The results of the present study also suggest that there are instances in which a majority of men can be threatened in daily life. In fact, social sensitivity is a skill used in daily conversations; thus, if the stereotype that men are not as good at decoding nonverbal cues as women is salient during social interactions, men may actually show a stereotype threat effect and

read others' nonverbal cues poorly, thereby creating communication problems. However, given our finding that only when men reported using deliberative or thoughtful strategies was their performance influenced by the threat manipulation, men may be able to reduce the negative effects of stereotype threat in daily life by using a more intuitive and less deliberative strategy to decode others' nonverbal cues.

The moderation of stereotype threat in men on a social sensitivity test by strategy usage also reveals a possible process behind stereotype threat. Because men who used a relatively deliberative strategy showed stereotype threat, whereas men who used a relatively intuitive or automatic strategy were not affected by the manipulation, we can assume that stereotype threat is a resource-demanding phenomenon. This evidence corroborates other research that has shown that stereotype threat reduces working memory capacity, and it lends credence to the theory that reduced cognitive capacity is a mediating process of stereotype threat. Once more is known about the processes behind stereotype threat and the conditions under which it is likely to occur, future researchers can investigate how to lessen the negative effects of stereotype threat in society.

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