

## STEREOTYPE THREAT AND THE GENDER GAP IN POLITICAL KNOWLEDGE

Matthew S. McGlone  
*The University of Texas at Austin*

Joshua Aronson  
*New York University*

Diane Kobrynowicz  
*The University of Texas at Austin*

Men tend to achieve higher response accuracy than women on surveys of political knowledge. We investigated the possibility that this performance gap is moderated by factors that render the communicative context of a survey intellectually threatening to women and thereby induce stereotype threat. In a telephone survey of college students' political knowledge, we manipulated two factors of the survey context: the alleged diagnosticity of the question set (i.e., whether it was portrayed as being sensitive to potential gender differences) and the gender of the interviewer. Consistent with previous studies of political knowledge, men scored higher than women overall. However, as predicted, this difference was reliably moderated by the manipulated factors. Women's scores were not reliably different from men's when the survey was portrayed as nondiagnostic and when women were interviewed by female interviewers. Diagnosticity and interviewer gender had no effects on men's scores. Consistent with previous research on stereotype threat, these results suggest that explicit and implicit cues reminding women of the possibility that they might confirm a negative gender stereotype can impair their retrieval of political knowledge.

Over the last 50 years, gender gaps in educational attainment and labor force participation have narrowed substantially. Despite dramatic changes in their learning and job skills, however, women are still underrepresented in political affairs. Women make up approximately half of the registered voters in the United States, but hold only 12.1% of the 535 seats in the U.S. 106th Congress—56 of the 435 seats in the House of Representatives and 9 of the 100 seats in the Senate. Women's political representation at the state government level is somewhat higher (in 2004, women held 28.5% and 22.5% of state executive and legislative offices, respectively), but is still far from equitable.

Some speculate that the underrepresentation of women in public office is due to gender gaps in interest and

knowledge about political affairs. Political scientists and pollsters have long noted a significant gap between men's and women's knowledge of basic civics, as well as contemporary political figures and events (Delli Carpini & Keeter, 1991; Jamieson & Kenski, 2000). Furthermore, numerous studies have documented substantial gender differences in reported interest in government and politics (e.g., Bennett & Bennett, 1989; Conway, 1985). The most common source of data about Americans' knowledge of public affairs and voting behavior is a series of nationwide telephone surveys known as the National Election Studies (NES). Based on NES data collected over the last 50 years, Delli Carpini and Keeter (1996) concluded that there is a significant gap in men's and women's knowledge of civic and political affairs that has remained surprisingly stable since the 1960s. For example, NES data collected between 1947 and 1989 indicated that men achieved 20 to 35% higher accuracy in identifying the political party currently controlling the U.S. House of Representatives, the collective term used to refer to the first 10 amendments to the Constitution (i.e., the Bill of Rights), any right mentioned in the Fifth Amendment, and identifying a senator or representative from their home state. Although there was some fluctuation in the size of the gender gap over time, the median change in this gap over 41 years has been very modest.

The persistence of the knowledge gap evident in NES data is consistent with findings of the Annenberg Survey Project, coordinated by Jamieson and her colleagues (Jamieson, 1996; Jamieson & Kenski, 2000; Jamieson et al.,

Matthew S. McGlone, Department of Communication Studies, The University of Texas at Austin; Joshua Aronson, Department of Applied Psychology, New York University; Diane Kobrynowicz, Division of Recreational Sports, The University of Texas at Austin.

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Address correspondence and reprint requests to: Matthew S. McGlone, Department of Communication Studies, The University of Texas at Austin, 1 University Station A1105, Austin, TX 78712. E-mail: matthew\_mcgclone@mail.utexas.edu

2000). The researchers found that gender differences in knowledge of presidential candidates persisted even when respondents were equated in terms of age, race, education, income, marital status, party identification, and exposure to news media. These results indicate that some mechanism beyond standard demographic factors is responsible for the knowledge gap. Conway (1985) suggested that women's apparent lack of political knowledge is due to their lack of interest in the domain. However, interest-based accounts are hard-pressed to explain why women have voted at an equal or higher rate than men since 1980 (Delli Carpini & Fuchs, 1993). Graber (1988) hypothesized that women are under less social pressure to remember information than men and consequently forget information at a faster rate; if so, the gender gap in political knowledge would be just one facet of a cross-domain retention gap. Although Graber's hypothesis has been embraced by some political scholars (Jamieson et al., 2000), to date there is no direct evidence to support this hypothesis. Moreover, the hypothesis is tenuous from a psychological standpoint, in that memory researchers have yet to document any cross-domain differences in memory capacity or forgetting proclivity (Bourtchouladze, 2002; Crawford, Herrman, Holdsworth, Randall, & Robbins, 1989).

A heretofore unexplored explanation for the gender gap in political knowledge is that the negative stereotypes about women's political acumen, as well as their minority status in politics and government, can impair their performance on knowledge surveys. A number of recent investigations have shown that negative stereotypes can undermine the intellectual performance of even very talented members of stigmatized groups. The picture emerging from this literature is that stereotypes undermine performance by creating concern on the part of members of the stereotyped group that their performance might serve to confirm the negative expectations others hold about them. Steele and his colleagues coined the term "stereotype threat" to refer to the extra cognitive burden involved in worrying about confirming the low performance expectations of others (Spencer, Steele, & Quinn, 1999; Steele, 1997; Steele & Aronson, 1995). Although women's risk of stereotype threat in the domain of political knowledge has not yet been documented, the possibility that women may succumb to stereotype threat is an intriguing explanation for the persistent gender gap in political knowledge.

How might stereotype threat enter into political knowledge assessment? Research exploring the effects of stereotype threat on women's mathematics performance offers some insights. Although mathematics and civics differ dramatically in content and application, they share the dubious distinction of being domains for which there are documented gender gaps in test performance and pervasive negative stereotypes ascribing inferior intellectual ability to females. Moreover, women constitute a small minority of students and professionals in highly quantitative

domains such as mathematics, physics, statistics, computer science, and engineering. The historical reasons for females' minority status in these domains are numerous and complex (Bennett & Bennett, 1989); however, one factor that has traditionally been overlooked is the possibility that the prospect of being a minority in a quantitative class or professional setting is aversive to women. Recent studies have demonstrated that women's mathematical performance is hindered when they are reminded of the negative stereotypes regarding females' mathematical abilities (e.g., Spencer, Steele, & Quinn, 1999). Furthermore, coupling women's minority status with pervasive stereotypes maligning their mathematical ability might serve to make quantitatively focused courses and professions intellectually threatening to them (Inzlicht & Ben-Zeev, 2000; Steele, 1997).

Stereotype threat may be elicited by any cue that increases the salience of a negative group stereotype. Overt reference to the stereotype constitutes such a cue; however, even seemingly innocuous environmental factors, such as the composition of the student group in a testing environment, can elicit threat responses. For example, Inzlicht and Ben-Zeev (2000) demonstrated that female students' performance on a standardized test of mathematics was influenced by the gender composition of the classroom in which the test was completed. Female students who completed the test in a classroom in which the majority of students were female performed significantly better than those who completed the test in a minority setting; however, male students' performance was not influenced by this manipulation. Thus, even subtle cues to minority status can evoke a sense of group identity that can heighten people's self-consciousness and impair their concentration in evaluative contexts (McGuire, McGuire, & Wanton, 1979).

Regarding political knowledge, various contextual attributes of a conventional telephone political survey like the NES might be sufficient to elicit a threat response. One such attribute might be an explicit reference to the stereotype itself. That is, female respondents' performance might be impaired when they are explicitly reminded of the negative stereotype regarding women and political knowledge. Research in the domain of standardized mathematics testing suggests that explicit reminders elicit stereotype threat. For example, Spencer et al. (1999) demonstrated that informing female respondents that a math test had yielded gender differences in the past produced a marked decrement in their performance relative to males and to females who were not informed of the test's alleged diagnosticity.

In addition to explicit references to the stereotype, other cues might serve to implicitly raise stereotype threat concerns among female respondents. One such cue is the gender of the survey interviewer, as indicated by the interviewer's voice over the telephone. People tend to be highly accurate in identifying the gender of transmitted voices (Lieberman & Mattingly, 1989) and thus respondents are likely to recognize the gender of a telephone interviewer.

If stereotype threat is experienced as a form of evaluation apprehension, a male voice posing the political knowledge survey questions to a female respondent might make her sensitive to the possibility of confirming a negative stereotype in the presence of a male witness. This consequence is especially likely if she presumes that males generally believe the stereotype (Spencer et al., 1999). Davis and Silver (2003) reported evidence consistent with this proposal in a study of interviewer race effects on survey responses. They found that African American respondents achieved lower response accuracy in a telephone battery of civics knowledge when interviewed by Whites rather than African Americans.<sup>1</sup> The authors interpret this performance decrement as evidence that minority respondents felt heightened pressure to disconfirm negative stereotypes in the presence of White interviewers, a pressure that disrupted their ability to answer the survey questions. We contend that female respondents in a political knowledge survey, who are also targeted by a relevant stereotype (i.e., “women don’t have an interest in or understanding of politics”) feel an analogous pressure when interviewed by a male interviewer.

The reported experiment explored the influence of the two factors described above—the presumed diagnosticity of survey questions to gender differences and the gender of the interviewer conducting the survey—on male and female students’ response accuracy in a telephone survey of political knowledge. Based on past research on the knowledge gap, we hypothesized that males would achieve higher accuracy on the survey than females overall. However, manipulating the alleged diagnosticity and gender of the survey interviewer allowed us to investigate the degree to which this gap is moderated by females’ apprehension about confirming a negative stereotype, independently of their actual political knowledge. Specifically, we predicted that female respondents who were led to believe that the survey was diagnostic of gender differences in political knowledge would exhibit poorer performance than women who believed that the survey was nondiagnostic in this respect. In addition, we expected that female respondents who were surveyed by male interviewers would exhibit lower response accuracy than women surveyed by female interviewers. We did not, however, expect the diagnosticity or interviewer gender manipulations to influence male respondents’ performance.

## METHOD

### *Participants*

One hundred forty one (71 females, 70 males) Lafayette College undergraduates participated in this experiment. The experiment was modeled after the telephone survey procedure used in the NES. A stratified random sampling procedure was used to contact volunteers. The 2000–2001 undergraduate phone directory served as a representation of the college population who could be contacted via tele-

phone. Only those students who had a phone number listed in the directory and were U.S. citizens (~93.6%, according to the Office of Residence Life) were considered candidates for sampling. The campus population was stratified by gender, and random samples of 100 students were drawn from each stratum. Of the 211 students contacted, 70 males and 71 females elected to participate in the survey. The age of respondents ranged from 18 to 23 years.

### *Materials*

A 10-question index was used to measure political knowledge (see Appendix). Items were selected from a list of 39 knowledge items that had yielded high corrected item-total correlations in past NES telephone surveys and are generally considered indicative of political awareness among scholars in government and politics (Delli Carpini & Keeter, 1996). The item-total correlations for the questions ranged from .53 (Bill of Rights) to .40 (Chief Justice).

### *Design and Procedure*

This experiment employed a  $2 \times 2 \times 2$  (respondent gender  $\times$  interviewer gender  $\times$  survey diagnosticity) between-participants factorial design. The dependent variable was the respondent’s performance (response accuracy proportion) on the 10-item political knowledge index.

Eligible participants were contacted by phone between 6 and 9 p.m. on weeknights in February and March of 2000 and asked to participate in a brief survey of political knowledge; they were offered no monetary or course credit incentive for participating. Half of each gender sample was surveyed by one of three female survey interviewers and half were surveyed by one of three male interviewers. Assignment to the interviewer gender conditions was randomized. Orthogonal to the interviewer gender manipulation, half of the participants were randomly assigned to the diagnostic survey description condition and half to the nondiagnostic description condition described below. All interviewers were trained to adhere to the scripted instructions (which left no room for ad-libbing) and engaged in extensive practice. Moreover, all interviewers were observed during the first four calls they made to ensure consistent quality in their interviews.

Interviewers began the survey interview by asking respondents to indicate their age, class (freshman, sophomore, junior, or senior), and gender. After providing this information, respondents were then told that they would be asked a brief series of questions about U.S. politics and government that they should answer to the best of their ability. In an effort to reduce the contribution of different guessing rates to the predicted performance gap (Mondak & Anderson, 2004), all respondents were strongly encouraged to guess if they did not know or were uncertain about the answer to a question. Using wording adapted from Spencer et al. (1999), interviewers raised the issue of the survey’s alleged diagnosticity as follows: “As you may know, there

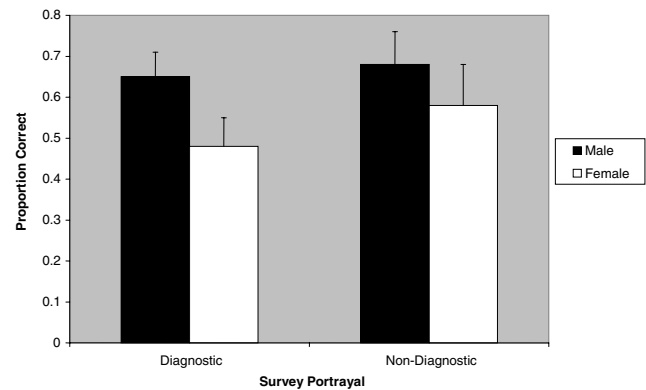
has been some controversy about whether there are gender differences in political knowledge. Previous research has sometimes shown gender differences and sometimes shown no gender differences."

Spencer et al. (1999) manipulated diagnosticity by subsequently informing participants that the current test had previously been shown to produce gender differences (diagnostic instructions) or had not been shown to produce differences (nondiagnostic instructions). These instructions were adapted for the political knowledge survey. Participants in the diagnostic description condition were told that "the survey you are participating in this evening has been shown to produce gender differences in previous research." Participants in the nondiagnostic description condition were told that "the survey you are participating in this evening has not been shown to produce any gender differences in previous research whatsoever." After the diagnosticity manipulation, the interviewer proceeded to ask the participant each of the questions in the 10-item knowledge index. Participants' responses to each question were recorded on a scoring sheet. When asked to clarify a question, interviewers repeated the question but did not explain any of the terms in the question. After asking all questions and recording respondents' answers, the interviewer reported to the respondent how many questions had been answered correctly (e.g., 6 out of 10) and provided correct answers to questions missed. After providing this performance feedback, the interviewers thanked the respondents and debriefed them regarding the true purpose of the survey procedure. On average, the entire telephone survey procedure lasted 15 minutes.

## RESULTS

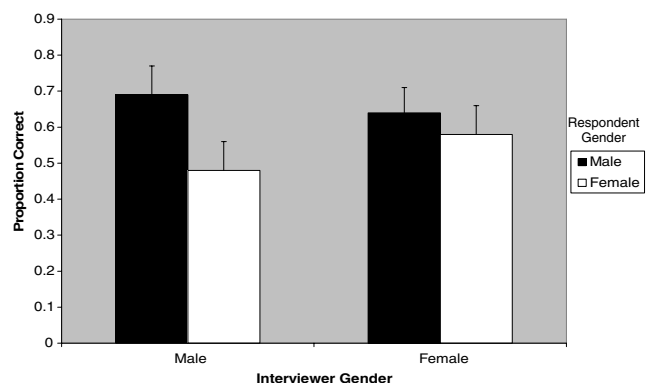
Respondents' answers to questions on the political knowledge survey were coded as correct or incorrect; "don't know" responses (3.6% of responses) were counted as incorrect. Two independent judges coded answers in this manner and were in agreement for 97.3% of the cases (Cohen's  $\kappa = .81$ ). Disagreements between the raters were scored as incorrect responses; disagreements between coders were no more likely for male or female respondents.

Initial analyses did not indicate any main effects or interactions attributable to individual differences among the three men or three women interviewers. Therefore, subsequent analyses collapsed across individual interviewers. A  $2 \times 2 \times 2$  (respondent gender  $\times$  interviewer gender  $\times$  diagnostic condition) analysis of variance was conducted to investigate the influence of the manipulated factors on respondents' survey accuracy. This analysis indicated a main effect of respondent gender,  $F(1, 133) = 29.66, p < .05$  ( $\eta = .43$ ). As predicted, men ( $M = .67$ ) achieved significantly higher mean accuracy on the survey than women ( $M = .53$ ). This finding is consistent with previous observations of the gender gap in political knowledge (Delli Carpini & Keeter, 1996).



**Fig. 1.** Survey accuracy by (alleged) diagnosticity and respondent gender.

Neither diagnosticity,  $F(1,33) = 3.43, p > .09$ , nor interviewer gender,  $F(1, 133) = 1.64, p > .10$ , exerted reliable main effects. However, both manipulated factors moderated the main effect of respondent gender on survey accuracy. The observed diagnosticity by respondent gender interaction,  $F(1, 133) = 4.05, p < .05$ , ( $\eta = .17$ ), indicated that men and women respondents were differentially influenced by the portrayal of the test as having shown gender differences in the past (see Figure 1). Fisher's LSD was computed, in this case,  $LSD(133) = .09, p < .05$ , to conduct multiple comparisons between the two-way interaction means. These comparisons indicated that women for whom the survey was portrayed as diagnostic achieved lower accuracy ( $M = .48$ ) than those who were led to believe that the survey was nondiagnostic ( $M = .59$ ),  $p < .05$ . Moreover, women's accuracy in the nondiagnostic condition was not significantly different from men's performance in the diagnostic or nondiagnostic conditions (.65 and .68, respectively). In addition, a significant interviewer gender by respondent gender interaction,  $F(1,133) = 4.63, p < .03$  ( $\eta = .18$ ), indicated that interviewer gender influenced respondents' accuracy (see Figure 2). Although interviewer gender did not influence male respondents' survey performance ( $M = .69$  with female interviewers,



**Fig. 2.** Survey accuracy by interviewer and respondent gender.

$M = .65$  with male interviewers), female respondents achieved significantly higher accuracy with female than male interviewers (.60 and .46, respectively), Fisher's LSD ( $133 = .12, p < .05$ ). The multiple comparison also indicated that women respondents interviewed by women achieved accuracy that was not significantly different from the accuracy achieved by men in either interviewer condition. No other main effects or interactions achieved statistical significance. These results show that the gender gap in political knowledge narrowed substantially when two potentially stereotype-threatening elements of the survey context were eliminated. Specifically, when women were interviewed by female (rather than male) interviewers and the survey was portrayed as nondiagnostic (rather than diagnostic) of alleged gender differences in political knowledge, the gender gap closed.

## DISCUSSION

Survey researchers have long been aware that people's desire to project a positive self-image can influence their reporting of attitudes and behaviors (e.g., Schumann & Converse, 1971). The concept of "social desirability bias" is routinely invoked when survey responses suggest a higher degree of awareness, affability, or resolve than less reactive measures indicate (Anderson, Silver, & Abramson, 1986; Welch, 1977). Our results suggest that impression management concerns can not only influence women's reported political attitudes (Bennett & Bennett, 1989), but also their facility in drawing on the knowledge upon which their attitudes are predicated (Davis & Silver, 2003). Specifically, we hypothesized that female respondents in a political knowledge survey would exhibit a performance decrement when threatened by the prospect of confirming a negative stereotype about their gender. We found that explicit reference to this prospect (i.e., the diagnostic survey description) impaired women's survey performance, as did the more implicit cue of a male interviewer's voice. These cues exerted no appreciable influence on men's performance. This combination of findings suggests that the manipulated factors rendered the communicative context of the telephone survey an intellectually threatening environment for our female respondents (Inzlicht & Ben-Zeev, 2000).

The implications of our results for the conduct of future political knowledge surveys are straightforward. Obviously, interviewers in these surveys should avoid mentioning to participants the possibility that the survey might yield gender differences in responding, even when this possibility is the principal focus of the survey project. We are not aware of any past survey projects that have procedurally mentioned gender differences in responses in this regard. However, some surveys may have inadvertently put female respondents on the defensive with their question content and order. For example, in the 2000 NES, a political knowledge section of the survey (K2: "Office Recog-

nition of Political Figures") is immediately preceded by a section querying respondents about the influence of various ethnic (African American, Asian, Latino, etc.), religious (Catholic, Protestant, etc.), and social groups on American politics (K1: "Group Influence"). The very last question in this section pertains to women's influence: "K1j. And the last group is women. Would you say they have too much influence, just about the right amount of influence, or too little influence?" (NES 2000 Survey script, p. 56).

Addressing this question immediately before answering a series of knowledge questions may inadvertently prime women's gender identity and thereby impair their performance. Shih, Pittinsky, and Ambady (1999) demonstrated a priming-based performance decrement of this sort in the domain of mathematics. Immediately prior to taking a GRE quantitative section, participants completed a brief questionnaire pertaining to their ethnic background, their gender identity, or their television viewing habits (control condition). Women who completed the gender questionnaire achieved significantly lower test scores than women in the ethnic background or control conditions. Shih et al. (1999) interpreted these findings as evidence that priming a task-relevant social identity (i.e., female) elicited concerns about confirming a negative stereotype about this identity (e.g., "women are bad at math") and thus led to a performance decrement. Analogously, an explicit question about women's influence in politics might serve to prime their identity as females and activate stereotype-based concerns about their political knowledge. In light of this possibility, it would be advisable to separate gender- and knowledge-oriented questions in future NES protocols.

Throughout its history, the NES project has not systematically controlled nor consistently recorded the gender of its telephone interviewers (David Howell, NES Director of Studies, personal communication, 2003). Consequently, we can only speculate about the measurement error this factor has contributed to the main source of data about the gender gap in political knowledge. In our controlled experiment with college undergraduates, the interaction of respondent and interviewer gender was reliable and of medium effect size ( $\eta = .18$ , or Cohen's  $d = .37$ ). The interaction was ordinal, in that interviewer gender appeared to influence women's performance, but not men's. If we assume that women's performance when surveyed by female interviewers reflects their facility with political knowledge in a nonthreatening environment, then previous studies may have significantly underestimated women's knowledge of politics and civics when male interviewers were employed. Akin to a predisposition for guessing (Mondak & Anderson, 2004), interviewer gender poses a serious source of error in the measurement of the alleged gender gap and should be addressed methodologically in future investigations of this issue. The advent of web-based, point-and-click survey procedures offers what is perhaps the most promising avenue for reducing or eliminating interviewer gender effects.

Two important qualifications regarding the explanatory scope of our findings are in order. First, our demonstration of the moderating influences of interviewer gender and (alleged) diagnosticity on the knowledge gap was conducted with a sample of college students. In this respect, our study is similar to previous studies of stereotype threat; however, this characteristic of our sample renders it less representative of the diverse national samples in which the gender gap has been observed over the years (Delli Carpini & Keeter, 1996; Jamieson & Kenski, 2000). Although stereotype threat can in principle occur in any individual for whom a stigmatized identity is contextually salient (Aronson et al., 1999), it is most keenly experienced among those who strive to excel in evaluative contexts (McGlone, Kobrynowicz, & Aronson, 1999). This motivational profile may be more common among women in college than those in other age ranges and settings. Second, we have not explored individual differences in female interviewees' perception of threat that stem from their general level of stigma consciousness—that is, their chronic preoccupation with a stigmatized (in this case, gender) identity (Pinel, 1999). Stigma consciousness has been shown to moderate women's susceptibility to stereotype threat, such that highly stigma-conscious women perform more poorly than those less stigma-conscious under the same threat conditions (Brown & Pinel, 2003). In the survey context investigated here, stigma consciousness might moderate interviewees' impressions of the interviewers, as well as the effect these impressions have on their survey responses. For example, a highly stigma-conscious female respondent might be more inclined to (a) believe that a male interviewer embraces the negative female stereotype and (b) be distracted by these stereotype-related thoughts. These and other individual differences that may aggravate or mitigate female interviewees' responses remain issues for future research.

Our findings add to the growing social scientific literature on the pernicious effects of stereotype threat. When a theoretic construct parsimoniously explains data in different studies and disciplines, it is fitting that the discussion turn from disparate phenomenologies to an integrated account of the necessary and sufficient conditions under which it can be used to predict and potentially intervene in behavior. In this spirit, we offer a constructive observation for a discussion of this sort about stereotype threat. As we and others have demonstrated, stereotype threat responses are predicated in large part on the social identity that is currently salient to a susceptible individual. The cues available to trigger a threatened social identity in the communicative context of a survey are numerous—a standard demographics question about gender or ethnicity, the use of a phrase associated with a particular cultural community, and so forth. Any of these contextual dimensions has the potential to prompt a stereotype threat response. However, these same dimensions can also be transmuted to cue self-affirming identities, thereby thwarting threat responses and in some

cases even boosting an individual's performance. For example, McGlone and Aronson (in press) demonstrated that women's chronic underperformance on math tests can be dramatically reduced when they are prompted to think of themselves in terms of identities other than their gender (e.g., a student at an elite private college). When female undergraduates at a private college were told that their scores on a geometric reasoning test would be compared to the scores of students at a local public university of less perceived prestige, their mean scores were not significantly different from their male peers. The operative social identity in an evaluative context thus appears to be not only the vector for stereotype threat phenomena, but also an antidote for their ill effects.

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## NOTE

1. This finding is based on the response accuracies of African American respondents who correctly identified the race of their telephone interviewer (Davis & Silver, 2003).

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## APPENDIX

### Ten-Item Knowledge Index Used in Telephone Survey (correct responses in parentheses)

1. What is the name of the U.S. Senate majority leader? (Trent Lott)
2. Whose responsibility is it to determine if a law is constitutional or not: The president, the Congress, or the Supreme Court? (Supreme Court)
3. How much of a majority is required for the U.S. Senate and House to override a presidential veto? (A two-thirds majority)
4. Which political party has the most members in the House of Representatives in Washington? (Republican Party)
5. Which political party is generally considered to be more conservative? (Republican Party)
6. What is the term commonly used to refer to the first ten amendments of the U.S. Constitution? (Bill of Rights)
7. What position is held by William Rehnquist? (Chief Justice, Justice, or Judge of Supreme Court)
8. How many years is the term of office for a U.S. Senator? (Six years)
9. Do you happen to know which political party has the most members in the U.S. Senate? Please name this party. (Republican Party)
10. What is your home state? Please name one U.S. senator – not a state Senator – from your home state. (e.g., Pennsylvania – Arlen Specter)