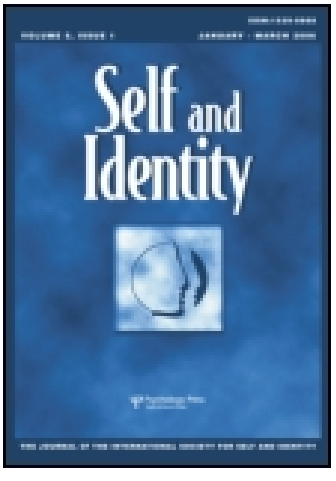

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Southern Discomfort: The Effects of Stereotype Threat on the Intellectual Performance of US Southerners

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Southern Discomfort: The Effects of Stereotype Threat on the Intellectual Performance of US Southerners

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Compared to other negatively stereotyped groups, a paucity of research has examined stereotypes of US southerners. Building from past research and theory on the phenomenon of stereotype threat, the current research examined the possibility that activating negative stereotypes of people from the southern US can undermine their performance on intellectual tasks. In four studies, southern US college students took a test consisting of difficult mathematical and verbal questions. When negative stereotypes about their group were activated, performance was lower compared to conditions in which stereotypes were not made salient. In addition, performance decrements associated with stereotype activation were found to be linked with individual differences in group identification. Results showed that higher levels of identification as a southerner predicted lower levels of test performance.

Keywords: Group identification; Stereotype activation; Stereotype threat; Social identity.

Compared to other regions of the United States, the "deep south" has long lagged behind in terms of the quality of education and student performance on standardized tests (e.g., see LeFevre, 2002, 2008; The Institute for a Competitive Workforce, 2007; The National Center for Public Policy and Higher Education, 2008). A recent state-by-state analysis and ranking reported that most states in the southern region fell into the bottom 30% on an index of educational effectiveness and performance on college entrance exams (LeFevre, 2008). These performance decrements could be due to a number of noted factors including

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those related to economics (e.g., expenditures per student, student–teacher ratio), rigor of educational standards, quality of the teaching workforce, etc. (see, e.g., Baker et al., 2001; Benner, Graham, & Mistry, 2008; Lee, Smith, & Croninger, 1997). In addition, psychological factors associated with culturally shared stereotypes (i.e., southerners are unintelligent or uneducated) might also influence the performance of southern students. However, compared to other negatively stereotyped groups (e.g., Blacks, Latinos, and women), little research has directly examined stereotypes of US southerners and even less work has been dedicated to how such stereotypes might affect members of this group.

A growing body of research on the phenomenon of *stereotype threat* has examined how activating negative stereotypes can decrease the performance of stereotyped group members (see Steele, Spencer, & Aronson, 2002, for a review). Stereotype threat has been characterized as a psychological predicament in which individuals fear that their performance may be evaluated in light of a negative stereotype of their group (Steele, 1997; Steele et al., 2002). In these situations, the possibility of confirming a stereotype of one's group is thought to place added pressure that can subsequently undermine an individual's performance. In a seminal set of studies, Steele and Aronson (1995) found that Black students performed worse than White students on intellectual tests when the stereotype about intellectual inferiority of African Americans was activated (i.e., believing that the test was diagnostic of ability or reporting one's race prior to the test). However, when the stereotype was relatively less salient (i.e., believing that the test was not diagnostic of ability or not reporting one's race prior to the test), test performance between Black and White students was equivalent. In contrast to explanations centering on genetic, socialization, or educational resource differences, this and other stereotype threat research suggests that variables within the performance situation can elicit differences among a variety of different groups (Steele et al., 2002).

Stereotype Threat and Southerners

Are similar decrements in performance likely when negative stereotypes are activated for southerners? As mentioned, relatively little research has been dedicated to stereotypes of this group. Some past research has identified perceptions of southerners as being uneducated and unintelligent (e.g., Campbell-Kibler, 2007; Reed, 1974). However, the prevalence and extent of group members' awareness of these associations are less clear. Thus, we conducted a preliminary study in which students at a southern US university were asked to list stereotypes of southerners. The findings suggest that southerners are keenly aware of negative stereotypes of their group. Of the twenty-nine participants, nineteen (65.52%) listed at least one response related to how southerners are viewed as unintelligent, whereas only seven participants (24.14%) reported intelligence as a stereotypic trait of the group. Moreover, subsequent responses on a 7-point scale (1 = *not at all prevalent*; 7 = *very prevalent*) indicated that participants believed the stereotype of intellectual inferiority to be one that is commonly held, significantly above the scale midpoint, $M = 5.31$, $t(28) = 4.98$, $p < .01$. Considering these perceptions, it is plausible that southerners may be subject to doubts about their intellectual ability. And, furthermore, when these negative stereotypes are activated, the intellectual performance of southerners will be impaired (Hypothesis 1). Empirical support for this prediction should hold a number of important implications for educational policies and practices in the south. For example, field research (Stricker & Ward, 2004) has shown a 33% reduction in

the gender gap in math performance when demographic questions (i.e., gender, race) appeared after, rather than before the test (see Danaher & Crandall, 2008). If southerners are subject to stereotype threat, moving common inquiries such as one's place of birth and residence could similarly decrease the well-established regional gap in standardized test performance.

That said, some southerners may be more or less susceptible to the effects of negative stereotypes. Social identity theory (Tajfel & Turner, 1986) posits that people are motivated to feel positively about themselves and that identification with social groups is one way fulfill this motivation. When threats associated with a particular group membership are encountered, individuals who derive more self-esteem from the group should feel more threatened than those who are less identified. Because negative stereotypes can serve as a threat to one's group identity, it has been posited that higher levels of identification with a negatively viewed group should be associated with more pronounced performance decrements related to stereotype threat (e.g., Schmader, 2002). For example, in a study of differences in gender identification (Schmader, 2002), males and females were given a math test either under the guise that the researcher was interested in how women perform relative to men (i.e., gender relevant) or without any mention of gender (i.e., gender irrelevant). When gender was not relevant to performance, men and women performed equally regardless of their level of gender identification. However, when gender was associated with the aim of test and thus negative stereotypes about female math ability were made salient, a different pattern emerged. Specifically, women who were relatively high in gender identification performed worse than men, but women relatively low in identification performed equally to men. Based on these findings, it seems plausible that individual differences in identification as a southerner should influence susceptibility to stereotype threat in a similar way. When negative stereotypes are activated, individuals who are relatively high in southern identification should perform worse on intellectual tasks compared to those that are less identified with the group (Hypothesis 2).

Research Overview

Four studies were conducted at a university located in the southern US. Approximately 85% of all participants tested were White and participants were classified as "southern" based on self-reports that they were born and had spent a majority of their lives in the following US states: Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas, and Virginia. This classification procedure is similar to that used in past research on southern culture (e.g., Cohen, Nisbett, Bowdle, & Schwarz, 1996; Vandello & Cohen, 2003; Vandello, Cohen, & Ransom, 2008) and this aggregation of states is identical to the "Confederate (Deep) South" categorization used by Vandello and Cohen (1999). Across the four studies, approximately 80% of all participants tested met these criteria (and 55% reported that they were born and had lived primarily in the state of Alabama). Because the self-relevance of an activated stereotype is integral to stereotype threat (Steele, 1997), we believed that these participants would perceive southern stereotypes to be particularly relevant. Data from the small number of participants who were not classified as southern were excluded from the primary analyses of each study.

In each of the following studies, the accessibility of stereotypes was manipulated prior to having participants answer questions similar to those used in the Graduate

Record Examination (GRE). Using different manipulations of stereotype activation, Studies 1–3 tested our first hypothesis that southerners will perform worse on a test of intellectual ability when awareness or activation of stereotypes is manipulated to be high rather than low. Study 4 tested our second prediction that these effects of stereotype threat are moderated by individual differences in the extent of group identification.

Study 1

The aim of Study 1 was to find initial support for the effects of stereotype threat on intellectual performance of southerners. Prior to taking a test of intellectual ability, participants either received information designed to activate negative stereotypes or received no stereotype-related information. We expected that overall test performance would be lower when negative stereotypes were made salient compared to when they were not (Hypothesis 1).

Method

Participants and design. Forty-seven University of Alabama undergraduates (41 females and 6 males) participated in exchange for partial course credit in their introductory psychology classes. All participants were born and had lived a majority of their lives in the southern US. Participants were randomly assigned to one of two conditions (control vs. stereotype activation).

Procedure. A total of one to four participants took part in any single session. Upon arrival to the lab, participants were seated at a computer station that was visually isolated from others. The study was introduced as research into problem solving in which participants would be asked to complete a number of quantitative and verbal problems. As part of these instructions, participants received information designed to manipulate stereotype threat (control vs. stereotype activation) prior to taking a test consisting of twenty GRE-type questions. After the test, participants responded to open-ended questions asking them to report their place of birth and where they had lived a majority of their lives (i.e., country and state; if USA). On completion of these measures, participants were thanked for their contributions and debriefed.

Independent variable. All participants received the same introductory instructions about the study with the following exceptions. In the control condition, participants were told that the purpose of the study was to gain insight into "psychological factors involved in solving verbal and quantitative problems." Furthermore, participants were told that they would receive performance feedback to help them become familiar "with the kinds of problems that appear on tests (they) may encounter in the future." These control instructions closely paralleled those used by Steele and Aronson (1995) and were aimed at creating the belief that performance on the test was not diagnostic of intellectual ability.

In contrast, participants assigned to the stereotype activation condition were led to believe that test performance was diagnostic of their ability. Specifically, these participants were told the study was "concerned with various personal factors involved in performance on problems requiring verbal and quantitative abilities" and that the performance feedback may help them become familiar with their

"strengths and weaknesses" in the tested areas (adapted from Steele & Aronson, 1995). These participants were also told that past research suggests that "individuals from northern states tend to perform better than individuals from southern states." This information was modified from a manipulation used in past research that examined gender stereotypes (see Stangor, Carr, & Kiang, 1998) and was designed to increase the salience of intellectual stereotypes about southerners.

Dependent measure. The test consisted of twenty GRE-type questions (10 quantitative and 10 verbal) and each item was presented randomly one at a time by the computer. Each multiple-choice question contained five answer options and was designed to be challenging. Participants were given an unlimited amount of time to answer the questions and were required to provide a response to each item. Because all participants completed the same number of questions, the total number of correct responses served as the index of test performance.

Results and Discussion

A one-way (control vs. stereotype activation) analysis of variance (ANOVA) was conducted on the total number of correct responses to the test questions. As predicted, participants in the threat condition ($M = 7.20$, $SD = 2.93$) performed significantly worse than those in the control condition ($M = 9.36$, $SD = 4.06$), $F(1, 45) = 4.46$, $p = .04$, $r = .30$. Separate one-way ANOVAs were also conducted on correct answers to verbal and quantitative problems. Results of these analyses showed patterns that were consistent with findings on the overall index of performance. Activation of the southern stereotype tended to inhibit performance on both verbal, $F(1, 45) = 1.84$, $p = .18$, $r = .20$, and quantitative questions, $F(1, 45) = 4.69$, $p = .04$, $r = .31$. Taken together, these findings are consistent with the hypothesis and past research on other negatively stereotyped groups (e.g., Steele & Aronson, 1995). When participants were told that test performance was diagnostic of their abilities and were also given information about the tendency for regional differences, they performed worse than when the test was supposedly non-diagnostic and no information about regional differences was provided.

Study 2

The goal of Study 2 was to conceptually replicate the findings of Study 1 using a more subtle manipulation of stereotype activation. As opposed to explicitly telling participants the direction of performance tendencies on the test (i.e., "individuals from northern states tend to perform better than individuals from southern states"), participants in Study 2 were either told that people from northern and southern states perform *differently* or they were not given any information about regional differences. In addition, test diagnosticity was also manipulated such that participants were told that performance was or was not diagnostic of their abilities.

Method

Participants and design. One hundred fourteen undergraduates (68 females and 46 males) at the University of Alabama received partial course credit for their participation. All participants were born and had lived a majority of their lives in the southern US. Participants were randomly assigned to a

2 (Test Diagnosticity: non-diagnostic vs. diagnostic) $\times 2$ (Southern Stereotype: absent vs. present) between-participants factorial design.

Procedure. The procedures and materials were identical to those used in Study 1, with the following exceptions. Participants were led to believe that performance on the test either was or was not diagnostic of their intellectual abilities. In non-diagnostic test conditions, participants received instructions regarding the purpose of the experiment and utility of the feedback that was identical to the control condition of Study 1. However, participants in diagnostic test conditions were given instructions pertaining to the purpose and feedback that was used in the stereotype activation condition of Study 1.

Different information was used to activate stereotypes in Study 2. Half of the participants were told the following: "regional differences in performance have been shown on this test (e.g., people from northern and southern states perform differently)." The remaining half of participants received no information concerning regional differences in performance. This manipulation was adapted from that used by Spencer, Steele, and Quinn (1999, Study 2) in which participants were or were not told that previous research had found gender differences in performance on a math test.

Results and Discussion

The number of correct responses was submitted to a 2 (Test Diagnosticity: non-diagnostic vs. diagnostic) $\times 2$ (Southern Stereotype: absent vs. present) between-participants ANOVA (for means and standard deviations, see Table 1). Consistent with the predicted effects of stereotype threat, a main effect emerged such that participants performed significantly worse on the test when information about regional performance differences was present rather than absent, $F(1, 110) = 4.41$, $p = .04$, $r = .20$. However, no main effect of Test Diagnosticity and no Test Diagnosticity $\times$ Southern Stereotype interaction were found (Fs < 1, ps $> .89$).

Due to the relatively balanced distribution of men and women in this study, an additional three-way ANOVA that included Test Diagnosticity, Southern Stereotype presence/absence, and Gender as between-participant factors was performed. On the overall index of test performance, the significant effect of stereotype activation, $F(1, 106) = 5.09$, $p = .03$, $r = .21$, was not qualified by gender—Southern Stereotype $\times$ Gender, $F(1, 106) = 1.60$, $p = .21$. However, a robust main effect of Gender emerged such that women ($M = 8.13$, $SD = 3.91$) performed worse than men ($M = 10.63$, $SD = 3.93$), $F(1, 106) = 8.16$, $p < .01$, $r = .28$ (no other effects approached significance, Fs < 1, ps $> .44$). Furthermore, separate three-way ANOVAs conducted on

Table 1 Number of Correct Answers as a Function of Test Diagnosticity and Southern Stereotype Conditions in Study 2

	Southern stereotype	
Test diagnosticity	Absent *M* (*SD*)	Present *M* (*SD*)
Non-diagnostic	9.97 (3.77)	8.30 (4.46)
Diagnostic	9.80 (4.26)	8.27 (3.71)

correct answers to either verbal or quantitative problems revealed only main effects of Gender, verbal performance: $F(1, 106) = 3.07$, $p = .08$, $r = .17$; quantitative performance: $F(1, 106) = 9.11$, $p < .001$, $r = .28$, with no interactions between condition and gender (Fs < 1, ps $> .22$).

These results provide an extension to the findings of Study 1. A significant effect on performance was found when relatively subtle, stereotype-related information was present. When simply told that "people from northern and southern states perform differently," participants performed worse on the test compared to when this information was not provided. These findings suggest that participants interpreted this information to be stereotype-consistent and, consequently, succumbed to the effects of stereotype threat. Furthermore, this effect was not found to be qualified by gender or the manipulation of test diagnosticity.

Although learning that a test is diagnostic of ability has been shown to yield effects of stereotype threat (e.g., Steele & Aronson, 1995), the lack of an observed effect of diagnosticity in the current study could be due to the perceived difficulty of the test. As proposed by Spencer et al. (1999), tests that are perceived as more difficult should be viewed as more diagnostic, more applicable to stereotypes, and should be associated with greater effects of stereotype threat. In a test of these predictions (Spencer et al., 1999, Study 2), women and men who were highly skilled and domain identified in mathematics took either a relatively difficult or easy math test. Results showed no gender differences in performance when the test was easy, however, women performed significantly worse than men in the difficult test condition. Spencer et al. (1999) reasoned that the unchallenging nature of the questions in the easy test served to counter any disruptions in performance due to threat. However, when the test was difficult, the negative stereotype served as an explanation for why women had difficulty solving the problems and this facilitated the impact of stereotype threat.

With this mind, the test questions used in the current study were designed to be challenging and the mean percentage of correct responses across conditions was less than 50% (i.e., 10 correct answers out of a possible 20), $M = 9.14$, $t(113) = -2.25$, $p = .03$, $r = .21$. Therefore, in non-diagnostic conditions, it is plausible that the high difficulty of the test may have elicited perceptions that the test was indeed diagnostic. This explanation is consistent with the lack of any observed effects of the diagnosticity manipulation. Performance did not differ as a function of diagnosticity level regardless of whether the stereotype information was absent or present ($F < 1$). Therefore, if perceptions of diagnosticity did not differ, it is possible that all participants experienced a situation in which the negative stereotype could explain difficulties they had in answering the questions. However, for participants who received the stereotype information (and presumably the stereotype was highly accessible), this potential may have been facilitated, thereby allowing the stereotype to have a greater influence on performance.

Study 3

Studies 1 and 2 demonstrated that performance of southerners can be inhibited by activating negative stereotypes with relatively explicit verbal information. It stands to reason, however, that such decrements could also be triggered by exposure to non-verbal stimuli that southerners may likely encounter in their daily lives. One possibility could be exposure to the Confederate flag. The Confederate flag has long been a prominent and polarizing symbol in the southern US. While some displays have been banned (Henry, 2004), elements of the flag remain a prominent part of

many state flags (including those of Alabama, Georgia, Mississippi, and Tennessee; see Coski, 2005; Orey, 2004; Reingold & Wike, 1998). For some, the Confederate flag serves as a painful reminder of racism and slavery. While for others, the flag is a symbol of "southern pride" or "heritage" (Reingold & Wike, 1998). In addition to these connotations, it is plausible that exposure to the flag increases the salience of one's identity as a southerner. Furthermore, as with past identity-based manipulations such as indicating one's race prior to a test (e.g., Steele & Aronson, 1995), perhaps exposure to the Confederate flag also activates negative stereotypes that can ultimately undermine performance. In Study 3, we examined how exposure to this symbol may impact southerners' test performance relative to a control condition.

Method

Participants and design. Seventy-five University of Alabama undergraduate students (45 females and 30 males) participated and received partial course credit in their introductory psychology classes. All participants were born and had lived a majority of their lives in the southern US. Participants were randomly assigned to one of two conditions (control vs. Confederate flag exposure) and performance on intellectual test questions served as the dependent measure.

Procedure. The procedures and materials were identical to those used in Studies 1 and 2, with the following exceptions. Prior to participants being seated at computer stations, a white binder was placed on each desk. For half of the participants, the front cover of the binder included an 8½ × 11 inch color print of the Confederate flag (Confederate flag exposure condition). The workstations for the remaining participants included a binder that did not include the flag print and was ostensibly blank (control condition). Once participants were seated, the experimenter said, "Oh, someone must have left this," and then placed the binder face-up on the upper-left corner of the desk were it remained for the entirety of the session (adapted from procedures used by Goplen et al., 2008). All participants then received instructions that led them to believe that performance on the forthcoming test was not diagnostic of their abilities. Furthermore, unlike Studies 1 and 2, no verbal information was given that could activate stereotypes.

Results and Discussion

A one-way ANOVA revealed a significant effect of the flag manipulation on the number of correct test answers, $F(1, 73) = 4.06$, $p < .05$, $r = .23$. Consistent with predictions, participants performed significantly worse on the test when the binder included a print of the confederate flag ($M = 8.27$, $SD = 4.18$) compared to when the binder was blank ($M = 10.31$, $SD = 4.38$). Additional analyses were also conducted to examine performance effects associated with gender. Results of a two-way ANOVA that included flag condition and gender as factors revealed no main effect of Gender and no Condition × Gender interaction on overall test performance (Fs < 1, ps $> .52$).[1]

Converging with the findings of Studies 1 and 2, the results of Study 3 further demonstrate that activating stereotypes of southerners can inhibit their intellectual performance. In addition, Study 3 provides an extension by showing that these effects can also be elicited by symbolic information. In this case, the performance of participants who were exposed to the confederate flag was significantly worse than

the performance of those who were not exposed to the flag. This finding is important because it suggests that decrements in performance can be induced by a symbol that southerners may likely encounter in their daily lives.

Study 4

Study 4 was designed to test whether the demonstrated effects of stereotype threat are influenced by the extent of group identification. Prior to the test, half of all participants responded to questions designed to activate stereotypes and assess their level of identification as a southerner (i.e., identity-salient condition). The remaining participants served as a control group and did not receive any identity-related questions before taking the test (i.e., control condition). Similar to effects found in Studies 1–3, answering these questions prior to the test should increase awareness of stereotypes and produce subsequent decrements in performance compared to the control condition. In addition, consistent with past gender research (Schmader, 2002), decreases in performance in the identity-salient condition should be more pronounced for individuals who report relatively high compared to low identification as a southerner (Hypothesis 2).

Method

Participants and design. Seventy-eight undergraduates (64 females and 14 males) at the University of Alabama participated in exchange for partial course credit. All participants were born and had lived a majority of their lives in the southern US. Participants were randomly assigned to one of two conditions (control vs. identity-salient) and performance on intellectual test questions served as the dependent measure. To ensure that any effects of southern identification were not confounded by differences in ability, participants' prior scores on the ACT standardized college admissions test were also recorded and used as a covariate in the analyses. Standardized test scores have been used to control for individual aptitude differences in previous studies of stereotype threat (e.g., Steele & Aronson, 1995).

Procedure. The procedures and materials were identical to those used in Study 3, with the following exceptions. First, none of the participants were exposed to the Confederate flag during the experimental session nor were any binders placed on participants' desks. Following instructions about the forthcoming test, participants in the control condition were immediately presented with the test materials. However, the remaining participants were given a set of questions designed to activate stereotypes and assess their level of group identification. These items included the same demographic questions used in the previous studies (i.e., birthplace and where they had lived a majority of their lives) and five additional questions targeting identification as a southerner (adapted from Luhtanen & Crocker, 1992; see also Schmader, 2002). These identity measures were paired with 7-point scales the endpoints of which were 1 (*strongly disagree*) and 7 (*strongly agree*): "Overall being from the south has very little to do with how I feel about myself" (reverse scored), "Being from the south is an important reflection of who I am," "Being from the south is unimportant to my sense of what kind of person I am" (reverse scored), "In general, being from the south is an important part of my self-image," and "I consider myself a southerner." Responses to these five items were found to be reliable ($\alpha = .80$) and were averaged to form a single index of southern

identification ($M = 4.69$, $SD = 1.29$). After completing the test, all participants were also asked to report their score on the ACT standardized college admissions test.

Results and Discussion

A one-way analysis of covariance (ANCOVA) procedure was performed in which participants' ACT scores served as a covariate ($M = 23.99$, $SD = 3.47$). Robust effects of both ACT score, $F(1, 75) = 53.81$, $p < .01$, $r = .65$, and the manipulation emerged. In particular, the overall mean number of correct answers was significantly lower in the condition where participants completed the identity questions before taking the test ($M_{\text{adjusted}} = 7.75$, $SE = 0.40$) as opposed to the control condition ($M_{\text{adjusted}} = 9.06$, $SE = 0.39$), $F(1, 75) = 5.48$, $p = .02$, $r = .26$. Furthermore, similar patterns of inhibited performance tended to emerge from separate analyses on answers to verbal, $F(1, 75) = 2.53$, $p = .12$, $r = .18$, and quantitative questions, $F(1, 75) = 2.27$, $p = .14$, $r = .17$.

As in Studies 1–3, participants performed worse when stereotypes were made salient prior to the test as opposed to when stereotypes were not activated. However, the primary aim of Study 4 was to examine whether higher levels of southern identification are associated with greater susceptibility to the performance-inhibiting effects of stereotype threat. To test this hypothesis, regression analyses were conducted in which the index of southern identification and ACT scores served as predictors of overall test performance within the identity-salient condition. Results of this analysis showed the predicted main effect of effect of group identification on test performance, $b = -.53$, $t(35) = -1.98$, $p = .05$, $r = .32$ (southern identification $\pm$ 1 SD, $\hat{Y}_{\text{high}} = 7.20$ vs. $\hat{Y}_{\text{low}} = 8.64$). In support of the hypothesis, higher levels of identification as a southerner predicted lower levels of overall performance on the test. Importantly, this effect emerged while controlling for individual differences in intellectual aptitude, ACT main effect: $b = 0.58$, $t(35) = 5.83$, $p < .01$, $r = .70$. Thus, an alternative explanation of performance differences that centers on a negative relation between southern identification and aptitude (i.e., greater identification associated with decreased intellectual ability) would not be supported.

This evidence for the role of southern identification is consistent with the tenets of social identity theory (Tajfel & Turner, 1986) and other work on identity and stereotype threat (Schmader, 2002; see Schmader, Johns, & Forbes, 2008, for a review). The findings of Study 4 also correspond to past research and theory concerning the influence on primes on behavior. According to the active-self account of priming effects (Wheeler, DeMarree, & Petty, 2007), increased prime-congruent behavior can occur when primed content is viewed as characteristic of the self. In support of this rationale, research has found increased assimilation effects on behavior when a first- rather than a third-person perspective is taken toward primed content (Galinsky, Ku, & Wang, 2005; Wheeler, Jarvis, & Petty, 2001). Similarly, when negative stereotypes about southerners were made salient in the current study, increased identification as southerner may have facilitated greater congruence between activated stereotypes and the self, thereby eliciting worse performance compared to that of less-identified individuals.

General Discussion

The relative underperformance of US southerners on standardized tests and other intellectual indicators has been well documented. These decrements have often been

linked to a number of structural deficiencies in the educational environment. For instance, compared to other US regions, many southern states have been noted as having low standards of academic rigor, a high student–teacher ratio, and relatively small amounts of educational funding (see, e.g., LeFevre, 2008). Although past research suggests that these and other structural properties may be important determinants (see, e.g., Baker et al., 2001; Lee et al., 1997), the current research suggests that psychological factors associated with negative stereotypes can also play an important role in the intellectual performance of people from the southern US.

For members of stigmatized groups, the possibility of confirming a salient negative stereotype may place added pressure that can undermine performance on intellectual tasks (Steele, 1997). Such effects of stereotype threat have been shown for individuals of many groups including African Americans (e.g., Steele & Aronson, 1995), women (e.g., Spencer et al.,1999), Latinos (Gonzales, Blanton, & Williams, 2002), and people from low socioeconomic backgrounds (Croizet & Claire, 1998). The current research offers converging evidence that stereotype threat can similarly inhibit the intellectual performance of US southerners. When stereotypes were made salient prior to taking a test of intellectual ability, southerners performed worse compared to when awareness of stereotypes was relatively low. In Studies 1 and 2, stereotypes were activated verbally by informing participants that either ''individuals from northern states tend to perform better than individuals from southern states'' (Study 1) or that ''regional differences'' in test performance have been documented (Study 2). Studies 3 and 4 showed that southerners' performance can be undermined in other ways, either by exposure to a Confederate flag (Study 3) or expressing one's level of identity as a southerner (Study 4). Furthermore, results of Study 4 showed that the degree of group identification predicted susceptibility to these effects. Specifically, higher importance placed on being a southerner was linked to greater proneness to the performance-inhibiting effects of stereotype threat.

While the current findings are consistent with a threat-based explanation, empirical support could have been strengthened in a number of ways. For instance, it would have been useful to include measures designed to capture the potential mechanisms responsible for the observed effects. Prior research has found support for several individual variables (e.g., anxiety, Spencer et al., 1999; physiological arousal, Blascovich, Spencer, Quinn, & Steele, 2001; working memory, Schmader & Johns, 2003) and recent theoretical work has posited that stereotype threat may be driven by multiple underlying mechanisms (see Schmader et al., 2008). In addition, some readers may have found it useful to assess the extent to which southern participants believed that their intellectual skills are deficient (e.g., relative to those from other geographic areas). For example, one could speculate that performance decrements under stereotype threat may have been most pronounced for participants who held existing beliefs in this direction. However, much past research would not support this possibility. For example, several studies have shown that stereotype threat impacts performance of those that are highly skilled (and plausibly have positive ability beliefs) in a particular domain (e.g., Schmader & Johns, 2003; Spencer et al., 1999). These and other studies highlight the notion that stereotype threat effects are not contingent on beliefs in the validity of stereotypes or perceived (or actual) deficiencies in abilities. Rather, stereotype threat is plausibly more dependent on an individual's perception that others hold stereotypic beliefs about one's group.

The current research would have also benefited from enhanced control through the use of manipulation checks and, more importantly, inclusion of participants who

had no affiliation with the southern US (e.g., northerners). Although numerous investigations suggest that stereotype activation does not adversely impact individuals not targeted by negative stereotypes (e.g., male math performance when gender stereotypes are activated; e.g., Spencer et. al., 1999), inclusion of non-southerners could have provided additional support for our threat-based explanation. For example, in Study 3, it is possible that underperformance associated with exposure to the Confederate flag may have been due to demand or the flag distracting participants away from the test materials. In this case, the presence of a non-southern control group could have potentially ruled-out these and other alternative explanations. Unfortunately, our convenience sample had little variability with regard to the geographic origins of potential participants. As previously discussed, a large majority of our participants (approximately 80% across the studies) reported that they were born and raised in southern states. Therefore, the self-relevance of southern stereotypes was likely constrained to be high in each study.

However, a supplementary analysis was conducted on the small number of non-southerners that participated in each study (i.e., those who were not both born and had lived primarily in the south). Across the four studies, participants received identical test questions and were randomly assigned to conditions in which the salience of southern stereotypes was manipulated to be high or low. Therefore, we pooled test performance data from the non-southern participants across the four studies ($n = 64$) and coded each participant as performing when stereotypes were accessible versus relatively inaccessible. A one-way ANOVA on the number of correct test answers revealed no significant performance differences as a function of whether non-southerners took the test under relatively high ($M = 9.22$, $SD = 3.72$) versus low ($M = 8.79$, $SD = 3.86$) stereotype activation, $F(1, 62) = 0.21$, $p > .64$. This finding suggests that negative stereotypes were not perceived as particularly relevant and thus these non-southern participants were plausibly not concerned that their performance might substantiate such beliefs. Moreover, this lack of a performance difference is consistent with a stereotype threat explanation for our primary findings and fails to support alternative explanations of Studies 1–4 (e.g., stereotype activation as experimental demand or distraction).

Future Directions

These findings have many implications and should open the door to future research. One important set of questions could be aimed at identifying factors that may reduce or eliminate the impact of stereotype threat for southerners. Although the current research shows that increased southern identification is associated with more pronounced performance decrements, it is plausible that making other aspects of the self accessible could counteract these effects. Past investigations of female math performance have found that effects of stereotype threat can be eliminated by making self-identity accessible as opposed to one's gender identity (Ambady, Parker, Steele, Owen-Smith, & Mitchell, 2004) and by increasing accessibility of many aspects of one's self-concept (Gresky, Eyck, Lord, & McIntyre, 2005). In these situations, greater individuation is thought to make negative stereotypes seem less self-relevant, thereby decreasing concern about possible stereotype confirmation. The opportunity to individuate should have similar effects on the performance of southerners. For example, when negative stereotypes about their group are salient, having southerners report their interests, likes, dislikes, etc. (Ambady et al., 2004), should serve to reduce effects of stereotype threat on a subsequent intellectual task.

Similar to the potential effects of individuation, another intriguing possibility would be to examine how increased accessibility of other group identities may alleviate stereotype threat for southerners (e.g., Rydell, McConnell, & Beilock, 2009; Shih, Pittinsky, & Ambady, 1999). For example, Rydell and colleagues (2009) found that the effect of stereotype threat on math performance for college females was eliminated when participants' female identity and their identity as a college student were simultaneous activated. Rydell et al. (2009) reasoned that the presence of the accessible and positive stereotype of being a college student (i.e., college students are good at math) allowed women to rely on this identity as a means to promote a positive self-view. Considering the population examined in the current studies (i.e., southern college students), the work of Rydell et al. (2009) provides a particularly relevant possibility concerning elimination of the demonstrated effects. For example, prior to a test, one could imagine that having southern college students subtly confirm their student identity (e.g., by checking a box; see Rydell et al., Experiment 4) may serve to inhibit an accessible southern identity, thereby alleviating effects of stereotype threat.

We look forward to exploring these and other possibilities in future research. Relative to other groups, little research has directly examined stereotypes of US southerners and even less work has been dedicated to how such stereotypes might affect members of this stigmatized group. It is our hope that this research helps foster future work on stereotypes and stereotype threat within and beyond the group membership examined in the current research.

Note

1. Separate two-way ANOVAs conducted on answers to verbal and quantitative problems showed patterns that were largely consistent with that found on overall test performance. There was a tendency for women to underperform men on verbal questions, $F(1, 71) = 2.96$, $p = .09$, $r = .20$, however, this tendency was not present on math performance ($p > .24$). Also, no Condition × Gender interaction emerged on either verbal or quantitative performance (Fs < 1, ps $> .55$).

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