Research Article

The Ups and Downs of Attributional Ambiguity

Stereotype Vulnerability and the Academic Self-Knowledge of African American College Students

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ABSTRACT—*This research examined whether stereotype vulnerability—the tendency to expect, perceive, and be influenced by negative stereotypes about one's social category—is associated with uncertainty about one's academic self-knowledge in two important ways. We predicted that stereotype-vulnerable African American students would (a) know less about how much they know than less vulnerable students do and (b) have unstable academic efficacy. In Study 1, Black and White participants took a verbal test and indicated the probability that each of their answers was correct. As expected, stereotype-vulnerable Black participants were more miscalibrated than other participants. In Study 2, participants completed measures of self-efficacy twice daily for 8 days. Also as expected, the academic efficacy of stereotype-vulnerable Blacks fluctuated more—and more extremely—than that of other participants. The results suggest that, in addition to undermining intellectual performance, stigma interferes with academic self-knowledge.*

Accurate knowledge of one's intellectual competence can be important to have: *Which talents should I develop? Which should I abandon? What career should I pursue? Should I consider college?* Because answers to such life-orienting questions benefit from a realistic assessment of one's strengths and weaknesses, accuracy counts (Major, McCoy, & Quinton, 2002); it helps people set appropriate goals, spend their time and efforts wisely, and avoid being embarrassed or demoralized by big

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failures. Psychologists have argued that having a clear sense of one's abilities—and liabilities—underlies such virtues as leadership and wisdom (e.g., Bennis, 1994) and, indeed, some view this kind of clarity as a vital component of intelligence itself (e.g., Gardner, 1999; Sternberg, 1996). Accordingly, important work in social psychology has shown that people are motivated to evaluate themselves accurately and, therefore, are eager to get diagnostic information about their abilities (e.g., Festinger, 1954; Trope, 1979).

But a variety of things interfere with accurate self-assessment. In many instances, self-esteem motives prevail: People give up accuracy in order to feel good about their abilities (Brown & Dutton, 1995; Dunning, 1995; Sedikides, 1993; Trope, 1979). Moreover, even when people want the truth, the multitude and complexity of variables affecting performance make the ability attribution process difficult (Darley & Goethals, 1980; Kruger & Dunning, 1999). For students at the extremes of the ability continuum—the superstar who excels with little effort under any circumstances and the hopeless incompetent who always fails—self-assessment is straightforward. But for the majority who fall within these extremes, there will be *attributional ambiguity* surrounding some of the domains in which they perform (Jones, 1989). That is, their performances, the feedback they receive, and their interpretations of such will leave room for uncertainty about their competence.

Such uncertainty ebbs and flows, and is probably most acute when students learn new skills or move on to new and more challenging academic environments. It is also clear that some people experience more—and more chronic—attributional ambiguity than others because something about them adds an extra layer of complexity to the ability attribution process. One such "something" is stereotype vulnerability (Aronson, 2002; Aronson & Steele, in press), which we have defined as the tendency to expect, perceive, and be influenced by negative

stereotypes about one's social category. In the studies reported here, we examined the relation between stereotype vulnerability and self-knowledge among African American college students, testing the general hypothesis that those who are especially stereotype vulnerable will exhibit inaccurate and unstable self-knowledge about their intellectual abilities.

Our model holds that stereotype vulnerability impairs self-knowledge in at least two ways. First, it heightens the well-documented tendency for targets of stereotypes to mistrust performance feedback in stereotype-relevant domains (Cohen & Steele, 2002). The ubiquity of stereotypes alleging intellectual inferiority, affirmative-action policies and the controversies surrounding them, and such issues as the cultural bias of tests provide ample grounds for African Americans—or any group stereotyped as intellectually inferior—to wonder if their outcomes and the feedback they receive accurately reflect their abilities. Studies find that African Americans discount performance feedback, especially when evaluators are aware of their race (Crocker & Major, 1989). Although this can have the positive effect of buffering their self-esteem from criticism, it can leave them uninformed about their abilities. Stereotype vulnerability increases the likelihood of mistrust and discounting of feedback (Cohen & Steele, 2002; Mendoza-Denton, Purdie, Downey, & Davis, 2002).

A second factor linking stereotype vulnerability with impaired self-knowledge is *stereotype threat* (Aronson & Steele, in press; Steele, 1997; Steele & Aronson, 1995), which refers to the apprehensions people feel when performing in a domain in which their group is stereotyped to lack ability. Numerous studies find that making ability evaluation or stereotypes salient leads Blacks and other stereotype targets to perform more poorly on standardized tests (see Aronson & Steele, in press, for a review), exhibit lower confidence (Stangor, Carr, & Kiang, 1998), or even perform worse athletically (Stone, Lynch, Sjomeling, & Darley, 1999). Stereotype threat can arise from mere salience of situational cues that activate social identity, such as the race or gender of other people in the room (Inzlicht & Ben-Zeev, 2000, 2003). Thus, subtle changes in the environment can produce marked changes in performance or confidence. Higher levels of stereotype vulnerability make one more sensitive to these environmental changes (e.g., Aronson, 2002).

We propose that these two effects contribute to distinct additional problems that may further impair achievement. Specifically, we hypothesize that stereotype vulnerability increases the difficulty of developing a clear academic self-concept—that is, a stable and accurate conception of one's strengths and weaknesses. The more frequently one experiences variability in performance (because of stereotype threat) or discounts performance feedback (because of mistrust), the less one learns about one's underlying abilities. We tested two specific hypotheses that derive from this reasoning. First, we hypothesized that individuals most prone to stereotype threat and mistrust of feedback (stereotype-vulnerable individuals) would make less

accurate assessments of their performances than their less vulnerable counterparts. In other words, we predicted that all other things being equal, the academic self-knowledge of stereotype-vulnerable individuals would be less in tune with reality—less "calibrated" (Lichtenstein & Fischoff, 1977)—than the academic self-knowledge of those who expect and perceive less bias.

Our second hypothesis was that stereotype vulnerability fosters "unstable efficacy," academic self-confidence that fluctuates more readily and more extremely than it does for the average person. Our analysis is similar to that of Kernis and his colleagues' analysis of "fragile" self-esteem (e.g., Kernis, Cornell, Sun, Berry, & Harlow, 1993) and Campbell's (1990) analysis of self-certainty, both of which suggest that individuals who lack clarity or certainty in their self-concepts experience unstable self-esteem. We apply a similar logic to academic *self-efficacy* (Bandura, 1977), the confidence in one's abilities to learn and accomplish academic tasks. Specifically, we reasoned that because stereotype-vulnerable Black students lack clarity about their abilities and because of the ups and downs produced by stereotype threat, such students have unstable and highly variable feelings of self-efficacy. This means they may feel only as smart or as dumb as their most recent success or failure. Thus, high marks on a test or approving smiles from a teacher will temporarily raise the confidence of a stereotype-vulnerable student higher than that of a nonvulnerable student. But by the same token, negative outcomes should depress their confidence more. Thus, we theorize that for African Americans, stereotype vulnerability impairs accurate self-knowledge, and impaired self-knowledge in turn fosters unstable academic efficacy. Because efficacy has been shown to be an important factor in students' achievement—sometimes as important a factor as intellectual ability itself (Bandura, 1977)—instability may create problems of its own.

To our knowledge, these hypotheses have not been directly tested, but prior research is consistent with our reasoning. For example, with regard to calibration, in one experiment reported by Steele and Aronson (1995, Study 4), African Americans who were asked to estimate their scores on a just-completed standardized test overestimated their performance by a wide margin, substantially more than White students did. Similarly, studies (e.g., Rowser, 1997) find that African American students maintain unrealistic aspirations for their academic and career success, overestimating the likelihood of getting high grades and prestigious jobs, even in the face of school failure. As for unstable efficacy, independent surveys conducted at large universities found that African American college students were significantly more likely than Whites to report that they felt "smarter on some days than others" (Aronson & Damiani, 1998).

In the experiments we report next, we tested our reasoning more directly by examining these effects as a function of students' levels of stereotype vulnerability, using the Race-Based Rejection Sensitivity Scale (Mendoza-Denton et al., 2002), a

measure that predicts academic underperformance and interracial mistrust, and that correlates with individual difference measures of vulnerability to stereotype threat (Downey, Veililla, Pietrzak, & Mendoza-Denton, 2004).

STUDY 1: PERFORMANCE CALIBRATION

In this study, we asked if African American students who are especially stereotype vulnerable know less about their abilities (i.e., are less calibrated) than less vulnerable Blacks and than nonstereotyped individuals. Black and White college students were presented with a 10-item verbal task and were asked to answer each item and judge the likelihood that each of their answers was correct. Participants then completed the measure of stereotype vulnerability. Comparing participants' estimates with their actual performance provided a measure of calibration.

Method

Participants and Design
Twenty-four Black and 22 White undergraduates at New York University participated for pay. The study compared Blacks who were high in stereotype vulnerability with Blacks who were low in vulnerability and with Whites.

Measures
Verbal Task. The verbal task consisted of 10 multiple-choice verbal questions taken from a Graduate Record Examination test guide. Following a procedure adapted from Lichtenstein and Fischoff (1977), we asked participants to make two responses for each item. First, they answered the question by selecting one of the five response options. Second, they indicated the likelihood that their choice was correct by circling one of nine probability estimates ranging from 20% (which would indicate that they were guessing) to 100%.

Stereotype Vulnerability. Participants completed the RS-Race scale (Mendoza-Denton et al., 2002), which measures race-based rejection sensitivity, the tendency to anxiously expect, readily perceive, and strongly react to rejection conceivably due to race ($\alpha = .94$). The RS-Race scale was developed and validated for Blacks and is related to institutional mistrust, stereotype threat, and academic performance (Mendoza-Denton et al., 2002). Black participants were categorized as high or low in stereotype vulnerability via a median split of scores on this measure. Whites were not split by stereotype vulnerability because the RS-Race scale has less psychological meaning for them, which renders individual differences on the scale difficult to interpret.

Procedure
Participants were enlisted in locations around campus. Once participants consented to participate, they were given a packet containing the verbal task and the RS-Race scale. After completing these, participants were asked to indicate their race, then thanked, paid, and dismissed.

Results and Discussion
If stereotype vulnerability hinders self-assessment, then Black participants' accuracy in estimating their knowledge should vary as a function of their stereotype vulnerability. Table 1 shows that the group means and correlations support our predictions: Even though Blacks' performance decreased with their level of stereotype vulnerability, $r(23) = -.46$, $p < .03$, their performance estimates actually increased with their level of stereotype vulnerability, $r(23) = .40$, $p < .06$. Although this pattern of results does get at self-knowledge, more interesting is an examination of miscalibration.

We measured miscalibration by examining over/underconfidence scores (Lichtenstein & Fischoff, 1977), calculated by subtracting each participant's average rating of the likelihood of being correct from the corresponding percentage of correct answers. Greater absolute values indicate more miscalibration, with positive values indicating overconfidence and negative values indicating underconfidence. Table 1 shows that participants' poor calibration was due to overconfidence and was predicted by stereotype vulnerability among Blacks, $r(23) = .66$, $p < .001$.

Because knowing less is correlated with poor calibration (Kruger & Dunning, 1999; Lichtenstein & Fischoff, 1977), we also examined miscalibration scores adjusted by test performance. The one-way analysis of covariance on miscalibration scores, with test performance as the covariate, revealed a significant main effect for group, $F(2, 40) = 5.34$, $p < .01$, $d = 0.73$.[1] An inspection of simple effects revealed that, as predicted, Blacks with high stereotype vulnerability were more miscalibrated—and more overconfident—than Blacks with low stereotype vulnerability, $F(1, 40) = 7.49$, $p < .01$, and than Whites, $F(1, 40) = 5.15$, $p = .03$. Both of these effects were rather large, Cohen's $d = 1.39$ and 1.55, respectively. Blacks with low vulnerability did not differ significantly from Whites, $p > .23$.

These findings showed that stereotype-vulnerable Black participants gauged their performance less well than less vulnerable Blacks or than Whites more generally. In contrast, the less vulnerable Blacks knew as much about their own performance as did Whites. Thus, it is not race per se that inhibits accurate self-knowledge; it is the tendency to interpret events as race related. Further, our results were not due simply to inferior performance among vulnerable Blacks; they were adjusted for performance on the test and are therefore unlikely to reflect an unskilled-and-unaware effect (Kruger & Dunning, 1999).

It is nonetheless conceivable that Black participants' overconfidence reflects self-presentational concerns rather than a

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[1]Following Rosner (1995), we excluded 1 outlier (in RS-Race) using the extreme Studentized deviate statistic, $ESD(11) = 3.17$, $p < .01$.

TABLE 1

Analyses of Proportion Correct, Estimated Proportion Correct, and Overconfidence in Study 1

| | Group | | | | | | | |
| | High-SV Blacks | | Low-SV Blacks | | Whites | | One-way analysis | Correlation with |
Dependent variable	M	SD	M	SD	M	SD	of variance	SV among Blacks
Proportion correct	0.16$_a$	0.11	0.30$_b$	0.21	0.37$_b$	0.23	$F(2, 41) = 4.28$**	$r(23) = -.46$**
Estimated proportion correct	0.69$_a$	0.17	0.57$_b$	0.14	0.66$_{ab}$	0.16	$F(2, 41) = 1.78$	$r(23) = .40$*
Overconfidence	0.54$_a$	0.16	0.27$_b$	0.21	0.30$_b$	0.15	$F(2, 41) = 9.32$***	$r(23) = .66$***
Overconfidence adjusted for performance	0.46$_a$	0.14	0.28$_b$	0.13	0.34$_b$	0.14	$F(2, 40) = 5.34$***	$r(20) = .53$***

Note. Within a row, means with different subscripts differ significantly at $p < .05$ (one-tailed) or less. Cell ns ranged from 11 to 21. SV = stereotype vulnerability.
*$p < .06$. **$p < .05$. ***$p < .01$.

lack of accurate self-knowledge. Specifically, stereotype-vulnerable Blacks may have overestimated their performance as a motivated response to stereotype threat. Although this would not be inconsistent with our general reasoning that any factor—motivational or cognitive—that obscures the attribution process can block the acquisition of accurate self-knowledge, it is possible that the observed overconfidence was merely a bravado response to threatening circumstances (e.g., Blanton, Pelham, DeHart, & Carvallo, 2001).

Therefore, in addition to testing our second hypothesis—that stereotype vulnerability fosters unstable efficacy in negatively stereotyped domains (i.e., in academics but not in athletics)—Study 2 was designed to allow us to address this alternative explanation. Specifically, the statistical assessment of uncertainty minimized self-presentational concerns and allowed freer expression of underconfidence as well as overconfidence.

STUDY 2: STABILITY OF SELF-EFFICACY

Black and White undergraduates completed efficacy measures twice a day for 8 days. Participants also completed the RS-Race scale, and Blacks were classified as either low or high in vulnerability according to a median split. We examined stability in both academic and athletic efficacy and in self-esteem over time.

Method

Participants
Forty-three Black and 42 White students at New York University participated in this study in exchange for payment.

Measures
Stability of Academic Efficacy, Athletic Efficacy, and Self-Esteem. Participants' academic self-efficacy was measured with the Self-Efficacy for Self-Regulated Learning Scale, an 11-item subscale adapted from Bandura's Children's Multidimensional Self-Efficacy Scale. This subscale measures students' self-efficacy for accomplishing academic tasks (see Pajares & Valiante,

2002). Using an 11-point Likert scale anchored by 0 (*cannot do at all*), 50 (*moderately certain can do*), and 100 (*certain can do*), participants indicated how confident they were of their ability regarding various academic skills and self-regulation strategies, such as "remember information presented in class" and "finish homework assignment by deadlines." Participants were asked to select the response that best reflected how confident they were at the particular moment they completed the form.

For the measure of athletic self-efficacy, participants responded to eight items concerning how confident they were that they could engage in strenuous physical exercise, such as "exercise for 20 minutes three or more times a week." Responses were made using an 11-point Likert scale anchored by 0 (*cannot do at all*), 50 (*moderately certain can do*), and 100 (*certain can do*). Participants answered each item with regard to how confident they felt at that particular moment.

Participants also completed Rosenberg's (1965) Self-Esteem Scale, a measure of global feelings of self-worth. They indicated how much they agreed with each item "at this moment." Responses were made on a 4-point Likert scale ranging from 0 (*strongly disagree*) to 3 (*strongly agree*).

The stability of each participant's three measures (academic self-efficacy, athletic self-efficacy, and self-esteem) was calculated as the intra-individual standard deviation of the total scores across multiple assessments; the higher the standard deviation, the more unstable the individual's confidence or self-esteem.

Stereotype Vulnerability. Participants completed the RS-Race scale ($\alpha = .92$).

Procedure
Participants completed the measures of academic efficacy, athletic efficacy, and global self-esteem twice a day for 8 days, approximately every 12 hr between Monday at 10:00 a.m. and Thursday at 10:00 p.m. for 8 days. Thus, participants were asked to complete each measure a total of 16 times. Immediately after completing the final set of confidence measures,

TABLE 2

Analyses of Stability Measures in Study 2

Stability measure	High-SV Blacks		Low-SV Blacks		Whites		One-way analysis of variance	Correlation with SV among Blacks
	M	SD	M	SD	M	SD		
Academic efficacy	9.15$_a$	5.31	5.56$_b$	3.50	5.66$_b$	3.26	$F(2, 65) = 5.28$**	$r(35) = .31$[†]
Athletic efficacy	6.67$_a$	5.03	6.17$_a$	4.21	5.93$_a$	4.26	$F(2, 65) = 0.86$	$r(35) = .04$
Global self-esteem	2.42$_a$	1.22	1.99$_a$	1.20	2.07$_a$	0.93	$F(2, 41) = 0.16$	$r(35) = .11$

Note. Higher means denote greater instability. Within a row, means with different subscripts differ significantly at $p < .05$ or less. Cell ns ranged from 17 to 33. SV = stereotype vulnerability.

[†]$p < .07$. **$p < .05$.

participants completed the RS-Race scale. We chose this sequence so that our estimates of stability would be untainted by participants' knowledge that we were investigating issues relevant to race.

Participants completed all measures on a Web site developed for the study. This eliminated the possibility that they could simultaneously complete multiple stability measures. After they entered the Web site address and special password, the Web site displayed each measure and recorded all responses.

Following established procedures (e.g., Kernis et al., 1993), we retained only those participants who completed a minimum number of confidence forms—in the present case, 11 of 16 forms. Dropping 10 participants who completed fewer than 11 stability forms, 4 who failed to complete the RS-Race scale, and 1 who submitted the identical stability forms throughout the multiple assessments left us with a total of 70 participants (37 Black and 33 White).

Results and Discussion

We predicted that stereotype-vulnerable Blacks would have less stable efficacy than less vulnerable Blacks and than Whites in the domain in which they are stereotyped to lack ability. Thus, we expected stereotype-vulnerable Blacks to have less stable academic efficacy than the other two groups, but we did not expect them to have less stable athletic efficacy or global self-esteem. Table 2 shows that the group means and correlations support our predictions: Stereotype vulnerability among Blacks predicted their instability in academic efficacy, $r(35) = .31$, $p < .07$, but not in athletic efficacy or self-esteem, all ps $> .53$.

A 3 (group: high-vulnerability Blacks vs. low-vulnerability Blacks vs. Whites) × 3 (stability domain: academic efficacy vs. athletic efficacy vs. self-esteem) mixed-model analysis of variance (with the last factor repeated) showed the expected two-way interaction between group and stability domain, $F(4, 130) = 2.44$, $p < .05$.[2] An analysis of the simple main effects for group across stability domains revealed only one significant finding—a main effect for group on stability of academic effi-

cacy, $F(2, 65) = 5.28$, $p < .01$. No other main effects were significant. Highly vulnerable Black participants had more unstable academic efficacy than Blacks with low vulnerability, $F(1, 65) = 7.23$, $p < .01$, and than Whites more generally, $F(1, 65) = 9.11$, $p < .01$ (see Table 2). Both of these effects were large, both Cohen's ds = 0.80. The low-vulnerability Blacks and Whites did not differ from one another, $F < 1$.

Examining other indices of academic instability, such as average maximum and minimum scores, revealed a similar pattern of instability and fragility.[3] Figure 1 shows that, as predicted, stereotype-vulnerable Blacks had higher highs, $F(1, 67) = 6.24$, $p < .02$, $d = 0.61$, and lower lows, $F(1, 67) = 7.04$, $p < .01$, $d = 0.65$, than all the other participants combined. Thus, in contrast with the results of Study 1, academic instability was not the result of overconfidence specifically; rather, instability of academic self-efficacy was due to both overconfidence and underconfidence, depending on when participants completed the measure.

When we examined stability in athletic efficacy and global self-esteem, however, results showed that stereotype-vulnerable Blacks were just as stable as low-vulnerability Blacks and Whites, all Fs < 1.

These findings supported three predictions. First, as in Study 1, Black participants who were stereotype vulnerable seemed to have less clear academic self-concepts than other participants. Specifically, they exhibited more numerous and more extreme ups and downs in their academic self-efficacy than Blacks who were not stereotype vulnerable and than Whites more generally. Blacks with low stereotype vulnerability, in contrast, had academic efficacy as stable as Whites'. Second, the instability of academic efficacy among the stereotype-vulnerable Blacks is unlikely to reflect simple self-presentational concerns because participants freely expressed both high and low self-efficacy, and self-knowledge was assessed statistically and not by self-report. Third, the heightened instability was specific to stereotyped domains; stereotype-vulnerable Blacks did not exhibit

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[2]Following Rosner (1995), we excluded 1 outlier, $ESD(19) = 2.84$, $p < .05$.

[3]Relative maximum and minimum scores were calculated for each participant by centering the participant's self-efficacy scores around his or her individual mean.
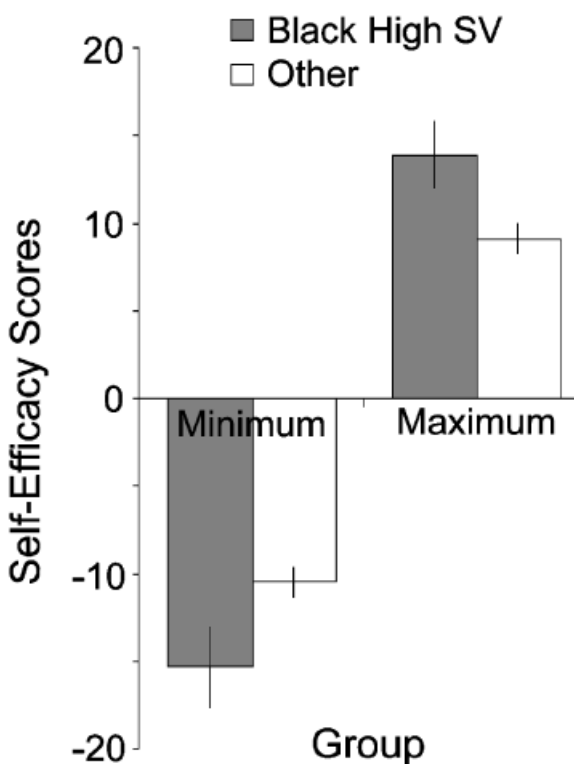
Fig. 1. Maximum and minimum academic self-efficacy scores among Blacks with high stereotype vulnerability (SV) versus all other participants. Error bars represent standard errors.

instability in athletics or global self-esteem. Therefore, instability—and perhaps inaccuracy—may be greatest in domains that are negatively stereotyped.

GENERAL DISCUSSION

We have argued that stereotype vulnerability—the tendency to expect and be bothered by prejudice and to be affected by stereotype threat—creates barriers to developing a stable conception of one's academic abilities. The results of these two studies are consistent with this reasoning. Study 1 demonstrated that irrespective of performance level, stereotype-vulnerable Blacks were the least in tune with the quality of their performance; they knew less about how much they knew than other participants did. Study 2 captured what we believe to be an effect of chronically being out of touch—a fragility of academic self-confidence that creates something of a roller-coaster ride of self-confidence.

What might be the consequences of unstable efficacy? We suspect—and further research is beginning to confirm—that unstable efficacy is associated with increased sensitivity to performance feedback, both positive and negative. Specifically, we found (Aronson & Inzlicht, 2003) that compared with stable-efficacy counterparts, Black students whose efficacy was unstable performed worse on a standardized test after receiving negative feedback and better after receiving positive feed-

back—suggesting that the lability we observed extends beyond confidence to actual performance. This may shed light on the finding that teachers' expectations tend to exert more influence on Black students than White students (Furgeson, 1998). Our research suggests that heightened sensitivity to feedback stems from the uncertain academic self-concepts to which Black students appear prone. Specifically, if attributional ambiguity leaves students unsure about their abilities, then any consistent and trustworthy source of information—such as a teacher's expectations—may be given undue weight. In the case of the college student or adolescent, who sees a number of different teachers in a number of different settings, this sensitivity to feedback could have the effect of creating the kind of instability evident in Study 2. Unstable efficacy, then, may foster performance reactivity among the stigmatized, and such reactivity coupled with low teacher expectations may compound achievement problems.

Although some people have interpreted research on attributional ambiguity to mean that members of socially devalued groups are impervious to stigmatization, our analysis adds to a growing body of literature showing that this is not always the case, that targets of stigmatization are not always shielded from negative outcomes (Major, McCoy, & Quinton, 2002). Research on *contingencies of self-worth* (e.g., Crocker, Sommers, & Luhtanen, 2002), for example, suggests that negative outcomes can hurt people who are stereotype vulnerable, but only in those domains in which they invest themselves deeply. Thus, the more a stereotype-vulnerable person bases self-worth on reflected appraisals—which tend to mirror negative social stereotypes—the lower the person's self-esteem (Crocker & Lawrence, 1999). Research on legitimizing ideologies (e.g., Jost, Pelham, & Carvallo, 2002; Major, Gramzow, et al., 2002) has shown that some members of low-status groups justify the existing social order, do not attribute outcomes to bias, and internalize feelings of inferiority. The results of Study 2 add to this framework by showing that even though stereotype-vulnerable Blacks' global self-worth may be buffered from the vicissitudes of daily life, their academic confidence is not.

The present studies examined the relationship between race, stereotype vulnerability, and self-knowledge. Although focused on African Americans, our analysis may apply more broadly. Anyone who experiences stereotype vulnerability may be robbed of opportunities to learn from feedback and performance, and thus from developing a clear academic self-concept. Because clarity matters for success, a central challenge of future research will be to examine the generality of this process—in addition, of course, to the process itself.

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