STEREOTYPE THREAT AND ACADEMIC PERFORMANCE

New Findings from a Racially Diverse Sample of College Freshmen

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Abstract

The theory of stereotype threat was developed to account for persistent minority underachievement in American colleges and universities. It hypothesizes that members of minority groups underperform academically because of unconscious fears of living up to negative group stereotypes. While evidence pertaining to stereotype threat has been positive, it mostly comes from small experimental studies of selected undergraduate subjects at a few universities. In this paper we test the theory of stereotype threat on a large, representative population of college and university students. Using data from the National Longitudinal Survey of Freshmen, which surveyed nearly 4,000 students at twenty-eight academic institutions, we construct scales to measure stereotype threat and use them to predict grades. We uncover a clear process of disidentification in response to minority stereotyping and show how it, along with other theoretically specified mechanisms, undermines the grade performance of minorities.

Keywords: Higher Education, Stereotype Threat, Minority Performance, Racial Identity, Disidentification

Prior to the Civil Rights Movement, racial and ethnic minorities were largely excluded from U.S. higher education. African Americans, in particular, were barred from most colleges and universities by a combination of *de jure* and *de facto* mechanisms, and they faced particularly severe barriers at selective institutions. If they were able to attend college at all, it was usually at a historically black college or university. Although elite private institutions such as Howard, Morehouse, and Spelman provided strong training for sons and daughters of the Black elite, most African Americans were relegated to poorly equipped, underfunded, racially segregated state

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institutions. The situation was not much better for Latinos, especially in Texas, where Mexican Americans were subject to the sanctions of Jim Crow.

The Civil Rights Movement transformed race relations in the United States and produced vigorous efforts to incorporate African Americans and Latinos into the mainstream of American society. Nowhere was this effort more apparent than in higher education. Led by the nation's selective institutions, American colleges and universities undertook deliberate attempts to recruit minority students through a variety of "affirmative actions" (Bowen and Bok, 1998). These efforts encompassed a range of different mechanisms for enhancing minority recruitment and admissions.

The new recruitment and admissions practices had pronounced effects on the racial and ethnic composition of students attending American colleges and universities. The share of non-Whites among U.S. college students increased substantially, going from 16% in 1976 to 27% in 1996 (National Center for Education Statistics 2001). Among African Americans aged 18 to 24, the share attending college went from 18.1% in 1972 to 30.3% in 2000, while the percentage of Latinos attending college went from 13.4% to 21.7%. By comparison, 36.5% of Whites and 55.9% of Asians aged 18 to 24 were enrolled in college in 2000 (U.S. Census Bureau 2004).

As the decades wore on, however, it became clear that mere recruitment into former bastions of white academic privilege would not be enough to erase the large gap in educational attainment between Latinos and Blacks, on the one hand, and Whites and Asians, on the other (Glazer 1997). Despite a variety of retention efforts—including better financial aid, remedial education, special tutoring, peer advising, culturally sensitive dorms, and ethnically supportive student unions—once admitted to institutions of higher education, African Americans and Latinos continued to underperform relative to their white and Asian counterparts, earning lower grades, progressing at a slower pace, and dropping out at higher rates. More disturbing was the fact that these differentials persisted even after controlling for obvious factors such as SAT scores and family socioeconomic status (Bowen and Bok, 1998; Vars and Bowen, 1998).

The theory of stereotype threat was developed by Claude Steele (1988, 1992, 1998) to account for persistent minority underachievement. He argued that members of a disparaged minority group are prone to underperform academically because of a fear of living up to negative group stereotypes about intellectual ability. If the fear is strong enough, it interferes with performance and over the long term leads to "disidentification," a psychological defense mechanism in which the domain where the threat occurs is dropped as a basis for self-esteem (Steele and Aronson, 1995; Aronson et al., 1998). The results of Lovaglia et al. (1998) suggest that stereotype threat may not be limited to African Americans, but can undermine the performance of any group symbolically identified as low status.

In the United States, a long-standing racist canard is that African Americans are intellectually inferior to Whites and incapable of performing academically at the same level as other groups (see Herrnstein and Murray, 1996; Tucker 2002). The stereotype of black intellectual inferiority is deeply embedded in American culture (Bobo and Johnson, 2000; Schuman et al., 1997; Sniderman and Piazza, 1993) and Black students are keenly aware of prevailing negative valuations of their mental abilities (Crocker and Quinn, 1998; Steele 1988, 1992). Every time that a Black student is called upon to perform academically, therefore, he or she is at risk of confirming a deeply rooted negative stereotype. The threat may be particularly salient at selective colleges and universities, where minority students are widely perceived (rightly or wrongly) by White faculty and students to have benefited from a "bending" of academic standards to admit them through affirmative action.

Intimations of intellectual inferiority also extend to Latinos. In the 1996 Multi-City Survey of Urban Inequality, for example, a representative sample of White respondents in Los Angeles rated Blacks as 37% less intelligent than Whites and Latinos as 45% less intelligent (Charles 2000). In contrast, Whites rated Asians to be 9% *more intelligent* than Whites. Asians themselves perceive a similar intellectual pecking order. Asians see themselves as 25% more intelligent than Whites, and Blacks and Latinos as 141% less intelligent than Whites (three times less intelligent than themselves!). Given this pattern we would expect the theory of stereotype threat to apply to Blacks and Latinos but not to Whites or Asians.

Failure to perform up to expected standards is psychologically distressing because it implies that the stereotype may, in fact, be true: perhaps Black and Latino students *are* intellectually inferior to Whites and Asians. Even if minority students do not believe the canard themselves, it is nonetheless socially embarrassing to reinforce such a negative stereotype before a White and Asian audience. Moreover, if minority students have internalized the negative stereotype themselves, they may adapt psychologically by downplaying the importance of academic success as a standard of self-worth, putting less effort toward academic achievement. If they fail, they can always tell themselves that they really did not try their hardest and that academic outcomes are not important as a measure of self-worth anyway.

The theory of stereotype threat rests on three basic assumptions. First, it assumes that people are motivated to think well of themselves and have others do the same. Second, it assumes that anxieties about the possibility of performing badly increase the likelihood of performing poorly. Third, it assumes that disidentification—psychological disengagement from the domain in question—stems from the internalization of negative stereotypes over the long term. Disidentification should not be confused with the related but more general concept of devaluation, which refers to the abstract perception of a domain as unimportant.

Disidentification involves the specific removal of the domain of competition as a measure of self-esteem (Crocker and Major, 1989; Crocker and Quinn, 1998). It is well documented, for example, that African Americans generally value education—indeed, they value it as much or more than other racial and ethnic groups (Hochschild 1995, 2003). Despite this valuation, African Americans consistently underperform academically but nonetheless have very high levels of self-esteem (Mruk 1999). This is the case, Steele would argue, because academic performance is not a central domain in which African Americans construct self-esteem: they have *disidentified* with academic achievement as a metric of self-worth.

Laboratory experiments undertaken to test the theory of stereotype vulnerability have yielded very supportive findings (Aronson et al., 1998; Steele and Aronson, 1995). In the typical experiment, one group of students is prompted to reduce stereotype threat before undertaking a test or intellectual task, while another is left alone or primed to increase stereotype threat. Results generally show an inverse relationship between degree of stereotype threat and intellectual performance. A major question, however, is the extent to which these results can be replicated outside the laboratory.

In order to apply the theory of stereotype threat in the real world, Steele et al. (in press) instituted a special program for African American students at the University of Michigan. Students were recruited into the program, but rather than stigmatize them by labeling it as an effort to compensate for their shortcomings, they were told that being in the program was an honor. They attended weekly seminars to get to know each other and share common experiences and then participated in specific "master workshops" to expose them to advanced material. After several years, results

showed that program participants earned better grades and were less likely to drop out than other Black students.

While evidence pertaining to stereotype threat so far has been positive, the theory has yet to be tested on a broad population of students. Mostly the data come from experimental studies of selected undergraduate subjects at a relatively few universities. In this analysis we test the theory of stereotype threat using a large, representative sample of college and university students. We begin by outlining a conceptual model of how stereotype threat is likely to operate in real-world settings. We then operationalize and test the model using data from the National Longitudinal Survey of Freshmen. Results offer clear support for the theory of stereotype threat. To the extent that Black and Latino students internalize negative stereotypes, they disidentify with educational achievement and reduce their academic effort, which translates directly into lower grades. To the extent that they expect others to evaluate them on the basis of negative stereotypes, moreover, they experience a performance burden that undermines achievement. Together these two psychological mechanisms decisively reduce academic performance among Blacks and Latinos relative to Whites and Asians.

RESEARCH DESIGN

Studying stereotype threat using a social survey is quite different from doing so in a laboratory. On a survey one cannot manipulate the degree of threat directly, but must tap into natural variation with respect to this psychological state in real world populations. For this reason, survey research is generally assumed to be less internally valid than experiments. However, in compensation, surveys provide greater external validity—an ability to generalize to a larger population outside of the laboratory (Campbell and Stanley, 1966). Given widespread support for the theory of stereotype threat in the laboratory, the crucial task at this juncture is to establish its external validity by systematically studying a large population of students located in diverse educational institutions.

In moving from the lab to the field, a crucial step is the specification of a strong theoretical model to guide analysis. Figure 1 presents a schematic diagram that summarizes our conceptualization of the process of stereotype threat and how it works in the real world, as opposed to the staged world of the laboratory. Exogenous to any individual are societal stereotypes that exist about various racial and ethnic groups. Simply by living in American society—by participating in its institutions and

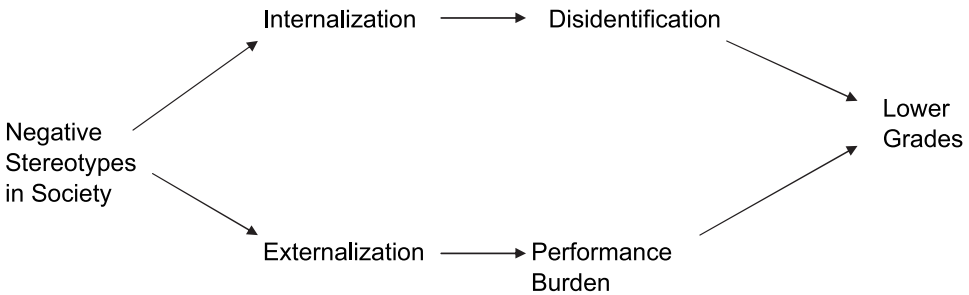

Fig. 1. Conceptual model of effect of stereotype threat on grade point

interacting with its people—minority members become aware of negative stereotypes about themselves, and depending on their position in the social structure, absorb them to a greater or lesser degree.

We hypothesize that stereotypes manifest themselves among individuals in two ways: internally and externally. Stereotypes are internalized when they are wholly or partly adopted by the individual and incorporated into social cognition (Fiske and Taylor, 1991). The internalization may be conscious or unconscious. Recent work has shown the remarkable degree to which stereotypes are absorbed implicitly, below the level of conscious awareness (see Banaji and Hardin, 1996; Bargh 1997; Dovidio et al., 1997). Given the difficulty of measuring unconscious attitudes in the context of a social survey, however, we focus here on the explicit internalization of negative stereotypes: the degree to which respondents consciously subscribe to negative beliefs about their group's abilities. To the extent that such explicit views represent the tip of a much larger cognitive iceberg, then our limited measurement is conservative: if we find any variation at all in the explicit endorsement of negative stereotypes by Blacks and Latinos, and to the extent that we find any connection at all between it and academic behavior, it is likely that better measurement would yield even stronger results.

The externalization of stereotypes occurs when minority members cognitively expect others to act on the basis of prejudicial notions when evaluating them. Most African Americans, for example, are well aware of the pervasiveness of the negative stereotype of Black intellectual ability. Indeed, growing up in American society, it is nearly impossible *not* to learn about the stigma of Black intellectual inferiority. It is logical to assume, therefore, that many Black students *expect* Whites and Asians to draw on this stereotype in evaluating their performance on intellectual tasks.

The internalization and externalization of negative stereotypes yield different behavioral outcomes. We posit that internalization—the conscious acceptance of the negative stereotype of intellectual inferiority—over time leads to a process of disidentification, expressed among college students by a reduction of their academic work effort. If academic success is removed from the domain of self-esteem, then logically less effort should be expended to achieve it. A reduction in effort, of course, yields poorer academic performance and lower grades.

At the same time, externalization—the expectation that others will draw on negative stereotypes in making evaluations—creates a psychological performance burden that increases test anxiety and undermines grade achievement. Students who believe that professors and other students are prejudiced against them will come to feel as if they are carrying the entire race on their backs every time they are asked to perform. If they fail to acquit themselves well, it will reflect badly not only on themselves and their family, but on the entire race. They are always at risk of confirming the canard of intellectual inferiority.

The model shown graphically in Figure 1 can be summarized mathematically in terms of five simple equations. The first two equations in this structural model link the internalization and externalization of stereotypes to background characteristics that reflect an individual's position in the social structure:

$$\text{INT} = f(\text{DEM}, \text{SES}, \text{REX}, \text{REI}) \quad (1)$$

$$\text{EXT} = f(\text{DEM}, \text{SES}, \text{REX}, \text{REI}) \quad (2)$$

where INT is a scale of internalization and EXT is a scale of externalization, DEM is a set of demographic characteristics, SES is a set of socioeconomic indicators, REX

stands for measures of prior interracial experience, and REI includes measures of racial-ethnic identity.

Prior interracial experiences are relevant because those who have had less exposure to Whites are more likely to be vulnerable to the effects of stereotype threat. We argue that students who grew up in more integrated settings have had more time to develop coping mechanisms to deal with the threat of intellectual inferiority and, to a greater or lesser extent, overcome it. Regardless of prior exposure, however, we expect that for all minority students' suspicions about their intellectual ability are heightened in the context of selective institutions because affirmative action is widely understood to be a factor in the admission of minority students.

Similarly, we include several racial-ethnic identifiers to measure how group-specific identity influences the internalization or externalization of negative stereotypes. We include these measures of ingroup identity because previous research suggests that a strong ingroup identity can provide a buffer against the negative effects of stereotypes (Lockett and Harrell, 2003; Miller 1999). We also consider the effect of social distance felt toward Whites, arguing that greater social distance insulates minorities from the effects of White prejudice (Portes et al., 1980; Portes and Rumbaut, 2001). Finally, we include a measure of skin color in recognition of the fact that darker skin tone is associated with higher levels of discrimination (Yinger 1994) and large unexplained differentials with respect to socioeconomic achievement (Hill 2000; Keith and Herring, 1991). As a result, darker-skinned minorities have a greater awareness of discrimination and are consequently more likely to expect Whites to act on the basis of negative racial stereotypes (Edwards 1973; Herman 2004).

The next two equations relate internalization and externalization to specific behavioral and psychological manifestations—disidentification and performance burden—while holding socioeconomic status and demographic background constant and controlling for the degree of academic preparation:

$$\mathrm{AEF} = \mathrm{f}(-\mathrm{INT}, \mathrm{DEM}, \mathrm{SES}, \mathrm{DAP}) \tag{3}$$

$$\mathrm{PPB} = \mathrm{f}(+\mathrm{EXT}, \mathrm{DEM}, \mathrm{SES}, \mathrm{DAP}) \tag{4}$$

where all variables are defined as before and AEF and PPB are indicators of academic effort and psychological performance burden, respectively, and DAP is the degree of academic preparation. The negative sign in front of INT means that its expected effect on academic effort is negative: the more deeply the stereotype is internalized, the less academic effort is put forth, as hypothesized by Steele (1997, 1999) and consistent with the findings of Oyserman et al. (2003). According to Steele and Aronson (1995, p. 809), "lower expectations, as the literature has long emphasized can further undermine performance by undermining motivation and effort. It is precisely a process of stereotype threat fostering low expectations in a domain that we suggest leads eventually to disidentification with the domain." In contrast, externalization is hypothesized to increase performance burden: the more one expects others to use negative stereotypes to frame minority performance, the greater the pressure to do well so as not to "let down the race" (Massey et al., 2002).

The last equation links the foregoing conditions with academic performance as measured by grade point average:

$$\mathrm{GPA} = \mathrm{F}(+\mathrm{AEF}, -\mathrm{PPB}, \mathrm{DEM}, \mathrm{SES}, \mathrm{DAP}) \tag{5}$$

where all constructs are defined as before and GPA refers to a respondent's college grade point average. As before, the positive and negative signs indicate the expected

direction of effects, with academic effort raising and performance burden lowering the earned grade point.

DATA AND MEASUREMENT

We operationalize the foregoing constructs using data from the National Longitudinal Survey of Freshmen (NLSF), a probability sample of students who entered selective U.S. colleges and universities as freshmen in the fall of 1999. Some thirty-five schools were asked to participate in the study, including all of the institutions studied by Bowen and Bok (1998) plus the University of California at Berkeley. The survey was sponsored by a grant from the Andrew W. Mellon Foundation, whose president (Bowen) contacted each institution's president or chancellor to request his or her support. In most cases the request was favorably received. Only seven institutions declined or were otherwise unable to participate (Duke, Hamilton, Morehouse, Spelman, Vanderbilt, Wellesley, and Xavier), yielding an institutional participation rate of 80%.

In the twenty-eight institutions that agreed to participate, we approached 4,573 randomly selected students and completed 3,924 face-to-face interviews, for an overall response rate of 86% (Massey et al., 2003). The baseline sample included 998 Whites, 959 Asians, 916 Latinos, and 1,051 African Americans. The survey was designed to gather extensive information about respondents prior to their entering college and to measure in some detail their initial attitudes, motivations, and perceptions. A detailed description of the sampling methodology, including the twenty-eight institutions and their characteristics, is contained in Massey et al. (2003).

The baseline survey was followed by a series of shorter telephone surveys designed to determine how respondents had fared since the first interview. Follow-up surveys were administered in the spring of 2000 and the spring of 2001, when respondents were freshmen and sophomores. The respective response rates on these waves were 96% and 90%. Whereas the independent variables used in our analyses were defined from the baseline survey, the dependent variable, academic achievement, was assessed using the two follow-up surveys: grades earned during the fall and spring terms of academic year 1999–2000 and during the fall term of academic year 2000–2001. In an earlier pilot survey carried out in 1998 at the University of Pennsylvania, we matched self-reported grades to official records and found that the grade reports were quite accurate (Massey et al., 2003).

Table 1 shows group-specific means of variables used to identify the constructs included in the five-equation model. The internalization of negative stereotypes is measured only for Latinos and Blacks and is based on respondent ratings of three items: whether their group is intelligent or unintelligent, hardworking or lazy, and whether their group "sticks with it or gives up easily." Each item was rated on a continuum from strongly disagree to strongly agree, yielding summated ratings scale with a hypothetical range of 0–18 and a Cronbach's reliability coefficient of .610 (construction of this and the other indices is summarized in Appendix A). As Table 1 shows, the mean level of internalization was around 6.6 for both minority groups, with an observed range of 0–14 and a standard deviation of around 2.3. There is thus considerable variation in the degree to which disparaged minorities have internalized negative stereotypes about their group.

The externalization scale is composed of four items, each rated on a 0–10 scale running from complete disagreement to complete agreement. Respondents were asked whether they expected Whites to treat others equally or discriminate, whether

Table 1. Group-specific means for variables used in analysis of stereotype threat: National Longitudinal Survey of Freshmen

Variable	White	Asian	Latino	Black
Theoretical Constructs				
Internalization of Stereotype	0.00	0.00	6.63	6.59
Externalization of Stereotype	0.00	0.00	19.99	22.72
Hours Studied per Week	26.22	28.00	28.72	27.10
Performance Burden	22.51	27.76	26.76	30.95
Demographic Background				
Male	0.47	0.43	0.42	0.35
Foreign-Born Parent	0.15	0.94	0.69	0.28
Intact Family Growing Up	0.82	0.84	0.68	0.52
Number of Siblings <18	0.89	0.84	0.91	0.84
Socioeconomic Status				
One Parent College Graduate	0.09	0.10	0.18	0.18
Both Parents College Graduate	0.15	0.16	0.11	0.12
One Parent Advanced Degree	0.37	0.31	0.25	0.23
Both Parents Advanced Degree	0.29	0.27	0.15	0.15
Percent of College Paid by Family	0.73	0.69	0.50	0.39
Academic Preparation				
Number of AP Courses Taken	3.23	3.82	2.89	2.33
High School GPA	3.78	3.79	3.70	3.55
Self-Rated Preparation	6.74	6.34	6.16	6.36
Institutional Selectivity				
Median SAT of School	1331	1330	1335	1317
Ingroup Exposure				
Segregation Experienced Growing Up	—	—	38.30	48.83
Number Friends Same Race-Ethnicity	—	—	2.69	5.62
Racial-Ethnic Identifiers				
Social Distance from Whites	—	—	19.45	26.07
Strength of Group Identity	—	—	10.84	13.04
Skin Color	—	—	2.73	4.97

they expected Asians to treat others equally or discriminate, whether they expected instructors holding stereotypes to use them in evaluating group members, and whether they thought students holding stereotypes would use them in making evaluations. The resulting scale yielded a hypothetical range of 0–40 and a reliability coefficient of .588 (see Appendix A). Externalization was somewhat greater for Blacks than for Latinos, with a mean scale value of 22.7 compared with 20.0. The observed range was 0–34 and the standard deviation of 6.5 for Blacks and 6.2 for Latinos again indicates considerable interpersonal variation with respect to the externalization of negative stereotypes.

The two proximate determinants of academic success we consider are the amount of effort put forth toward academic achievement and the degree to which respondents experienced an academic performance burden. Although all respondents provided us with a self-rating of their academic effort using a 0 to 100 scale (where 0 indicated no effort and 100 indicated maximum possible effort), this subjective rating was highly correlated with another, clearer indicator: the number of hours per week spent studying. Given the latter variable's more objective meaning and interpretation, we employ it in all subsequent analyses. All groups reported studying an average of twenty-six to twenty-nine hours per week, with Whites being the lowest and

Latinos highest. Standard deviations were on the order of 14–16, once again indicating considerable variation among respondents in all groups.

The felt performance burden was measured using a nine-item scale that asked subjects to use a ten-point scale to rate the extent of their agreement or disagreement with items such as: "if my instructors know my difficulty in class they will think less of me," "if I excel academically it reflects positively on my own group," and "I don't want to look foolish or stupid in class" (see Appendix A for the full set of items). The resulting scale had a theoretical range of 0 to 90, and a reliability of 0.714. As Table 1 indicates, Blacks experienced the greatest performance burden with a scale score of 31.0, followed by Asians and Latinos at 27.8 and 26.8, and Whites felt by far the least burden at 22.5. The observed range was 0–65 and standard deviations were rather large, ranging from 11 to 14.

All of the equations include controls for demographic background and socioeconomic status. Demographic background was measured using gender, whether the respondent had a foreign born parent, whether he or she grew up in an intact family, and the number of siblings under the age of eighteen. Socioeconomic status was measured using parental education (whether college or advanced degrees were held by parents) and the proportion of college costs being paid for out of family or personal resources, which is a more reliable indicator of status than self-reports of family income and wealth (see Massey et al., 2003).

Models of academic achievement also include controls for the degree of prior academic preparation and institutional selectivity. Preparation is measured by the number of advanced placement courses taken, grade point earned in high school, and a self-rating of the degree of preparedness on a 0 to 10 scale. Selectivity of the institution was measured using the median SAT score reported for students at each school as reported in the college evaluation issue of *US News and World Report* (listed in Massey et al., 2003).

The models estimated to predict internalization and externalization include two measures of prior ingroup exposure: the degree of segregation experienced while growing up (the average percentage of Blacks and Latinos in schools and neighborhoods inhabited by respondents at ages six, thirteen, and eighteen); and the number of ingroup members among the respondent's ten best friends in high school. As can be seen in Table 1, on both indicators Blacks experienced more racial isolation while growing up than did Latinos.

Finally, we also drew upon three racial identifiers to predict the internalization and externalization of negative stereotypes. Skin color was measured using interviewer ratings of the respondent on 0–10 scale ranging from very light to very dark. Social distance from Whites was measured using 0–10 closeness ratings with respect to different targets: young White men, young White women, rich Whites, middle-class Whites, and Whites in general. The resulting scale had a range of 0–50 (both hypothetical and observed) and a reliability of .898 (see Appendix A). Whereas Blacks evinced an average social distance rating of 26.1 with respect to Whites, the Latino distance rating was only 19.5.

Strength of ingroup identity was measured using seven items, five of which were rated on a 0–10 scale, one on a 0–2 scale, and one on a 0–4 scale, yielding a scale ranging from 0–55 (but an observed range of only 1–26) and a reliability of .746. The items asked respondents the extent of their disagreement or agreement that members of their group should vote for other ingroup members, shop in ingroup stores, live in ingroup neighborhoods, etc. (the full set of items is shown in Appendix A). Again, Blacks displayed a stronger average ingroup identity than Latinos, with a mean scale value of 13.0 compared with 10.8.

SOURCES OF INTERNALIZATION AND EXTERNALIZATION

Table 2 presents estimates of an equation predicting the degree to which Latinos and Blacks internalize negative stereotypes about their group's intellectual abilities. These and other equations were estimated using robust standard errors that adjusted for the fact that our sample is clustered by university. We expect that degree of internalization reflects a person's position and prior experiences in American society. Although variation in our indicator internalization is not very strongly related to the variables in the equation ($R^2 = .027$), we do find several significant relationships. In general, males are more likely to internalize negative stereotypes than females, and the tendency toward internalization rises as economic status increases. Internalization appears to be lowered by having more ingroup friends and by having a stronger ingroup identity. Those who are most at risk of internalizing negative stereotypes appear to be Black and Latino males who come from affluent families, who have made few Black or Latino friends while growing up, and who have weak racial or ethnic identities. A strong Black or Latino identity and rich ingroup experiences thus seem to provide some immunity against negative societal stereotypes.

As the estimates of Table 3 indicate, the externalization of negative stereotypes is more strongly predicted by independent variables than in the internalization model ($R^2 = .088$). Among demographic factors, externalization is negatively predicted by growing up in an intact family and is reduced by a rising number of siblings under

Table 2. Model predicting the degree of internalization of stereotype of intellectual inferiority by Black and Latino respondents to the NLSF

Variable	B	SE
Demographic Background		
Male	0.484***	0.123
Foreign-Born Parent	−0.119	0.127
Intact Family Growing Up	0.080	0.149
Number of Siblings <18	0.105	0.070
Socioeconomic Status		
Neither Parent College Graduate	—	—
One Parent College Graduate	0.127	0.150
Both Parents College Graduate	−0.250	0.233
One Parent Advanced Degree	0.010	0.146
Both Parents Advanced Degree	−0.172	0.179
Percent of College Paid by Family	0.406**	0.167
Ingroup Exposure		
Segregation Experienced Growing Up	0.000	0.002
% Friends Same Race-Ethnicity	−0.047**	0.040
Racial-Ethnic Identifiers		
Social Distance from Whites	0.011	0.009
Strength of Group Identity	−0.031**	0.015
Skin Color	0.018	0.028
Intercept	6.465***	0.367
R^2	0.028***	
N	1,619	

*p < .10
**p < .05
***p < .01

Table 3. Model predicting the degree of externalization of stereotype of intellectual inferiority by Black and Latino respondents to the NLSF

Variable	B	SE
Demographic Background		
Male	−0.839***	0.244
Foreign Born Parent	−0.142	0.343
Intact Family Growing Up	−0.685*	0.364
Number of Siblings <18	−0.310	0.242
Socioeconomic Status		
Neither Parent College Graduate	—	—
One Parent College Graduate	0.004	0.497
Both Parents College Graduate	0.903**	0.409
One Parent Advanced Degree	0.727***	0.220
Both Parents Advanced Degree	1.168**	0.445
Percent of College Paid by Family	−0.547	0.579
Ingroup Exposure		
Segregation Experienced Growing Up	−0.015**	0.007
% Friends Same Race-Ethnicity	0.075	0.057
Racial-Ethnic Identifiers		
Social Distance from Whites	0.084***	0.014
Strength of Group Identity	0.181***	0.038
Skin Color	0.224***	0.064
Intercept	18.318***	0.874
R^2	0.088***	
N	1,656	

*p < .10
**p < .05
***p < .01

age eighteen and by being male. In terms of socioeconomic status, the expectation of stereotyping rises with parental education. Indeed, those Blacks and Latinos whose parents *both* have advanced degrees are most likely to expect others to use stereotypes in making evaluations about them.

The expectation of stereotyping is also significantly increased by growing up under segregated circumstances and by having a strong ingroup identity. As the strength of a respondent's Black and Latino identity increases and as perceived social distance from Whites rises, so does the predilection to see stereotyping as prevalent in society. Moreover, the darker the skin color the more likely respondents were to expect others to use racial-ethnic stereotypes in evaluating them. Thus, having a strong ingroup identity and coming from a segregated background appear simultaneously to lower the internalization and increase the externalization of stereotypes. The greater the adherence to a Black or Latino identity the less students accepted negative societal views about their intellectual abilities but the more they expected others to have and use them in evaluating their performance.

DISIDENTIFICATION

We hypothesize that the internalization of negative stereotypes about intellectual ability will put Black and Latino students at greater academic risk compared with

their White and Asian peers through a process of disidentification, a psychological adjustment whose behavioral marker is a reduction of academic effort (Oyserman et al., 2003; Steele 1999). We thus expect to find a negative relationship between internalization and the number of hours respondents report studying per week. In Table 4 we show the results of an OLS regression of hours studied on internalization controlling for demographic background, socioeconomic status, academic preparation, and institutional selectivity for Black and Latino students.

We find clear support for a process of disidentification—as Black and Latino students come to internalize negative stereotypes about themselves they systematically reduce their study effort, reducing their weekly study time by one-half hour for each point increase in the internalization score. Given that this index has an observed range of 0 to 14, moving from the lowest to highest level of internalization essentially subtracts seven hours of weekly study time, eliminating the Black and Latino advantage relative to Whites and turning them to deficits.

In other words, although the natural proclivity of Black and Latino students is to study harder than Whites, other things equal, internalization of the stereotype of intellectual inferiority counteracts this proclivity and at the extremes can reduce study effort to a level well below that of Whites. Other variables predicting hours studied include gender (males study less), immigrant origins (those with an immigrant parent study more), and prior academic achievement (those with high GPAs in high school study more).

Table 4. Model predicting hours studied by Black and Latino respondents to the NLSF

Variable	B	SE
Internalization of Stereotype		
Internalization Scale	−0.451**	0.139
Demographic Background		
Male	−1.539*	0.901
Foreign Born Parent	1.798**	0.772
Intact Family Growing Up	0.742	0.691
Number of Siblings <18	0.567	0.442
Socioeconomic Status		
Neither Parent College Graduate	—	—
One Parent College Graduate	−0.957	0.914
Both Parents College Graduate	0.019	0.885
One Parent Advanced Degree	−0.735	1.008
Both Parents Advanced Degree	−0.001	1.025
Percent of College Paid by Family	−0.241	0.791
Academic Preparation		
Number of AP Courses Taken	0.185	0.185
High School GPA	6.221***	0.947
Self-Rated Preparation	−0.186	0.129
Institutional Selectivity		
Median SAT of School	0.011*	0.005
Intercept	−7.499	7.003
R^2	0.075***	
N	1692	

*p < .10
**p < .05
***p < .01

PERFORMANCE BURDEN

Our second hypothesis is that the externalization of stereotypes—the belief that Whites and Asians hold negative views about Black and Latino intellectual capacities and draw upon these stereotypes in making evaluations—will contribute to a greater felt performance burden among Black and Latino students. To test this idea we regressed our indicator of externalization on the performance burden felt by NLSF respondents, controlling for the various background characteristics already specified. The OLS estimates shown in Table 5 offer modest support for this hypothesis. As can be seen, a point increase in the degree of externalization is associated with a .13-point increase in the perceived performance burden. The scale range of 0 to 34 means that in moving from minimum to maximum externalization, the performance burden increases by 4.4 points. Each standard deviation is associated with about a half-point increase in academic performance burden.

The burden of performance is increased by being male and having a foreign-born parent. Performance burden for Blacks and Latinos is decreased by being better off financially (higher percentage of college paid for personally), having higher levels of achievement in high school (GPA), and perceiving oneself as being well prepared for college. It should also be noted that of the models tested, this had the worse fit, providing evidence that there is ample room to improve our understanding of the roots of minority achievement.

Table 5. Model predicting performance burden felt by Black and Latino respondents to the NLSF

Variable	B	SE
Externalization of Stereotype		
Externalization Scale	0.129**	0.060
Demographic Background		
Male	1.104*	0.627
Foreign-Born Parent	−0.184	0.503
Intact Family Growing Up	0.433	0.562
Number of Siblings <18	0.111	0.269
Socioeconomic Status		
Neither Parent College Graduate	—	—
One Parent College Graduate	−0.925	0.694
Both Parents College Graduate	−1.286	1.223
One Parent Advanced Degree	−0.290	0.754
Both Parents Advanced Degree	−1.311	0.779
Percent of College Paid by Family	−1.654*	0.924
Academic Preparation		
Number of AP Courses Taken	0.018	0.126
High School GPA	−1.278	0.671
Self-Rated Preparation	−0.143*	0.078
Institutional Selectivity		
Median SAT of School	0.006	0.003
Intercept	26.023***	5.376
R^2	0.017***	
N	1756	

*p < .10
**p < .05
***p < .01

STEREOTYPES AND ACADEMIC ACHIEVEMENT

The ultimate importance of the foregoing processes—internalization, externalization, disidentification, and the experience of a performance burden—is the degree to which they translate into differential rates of academic success. A key indicator of school success is grade point average. Maintaining an adequate grade point is not only an intermediate step on the road to college graduation, it is also important end in and of itself. GPA determines eligibility for financial assistance and determines access to honors, awards, and scholarships. Grades are also crucial in determining the likelihood of getting into graduate and professional schools, and in shaping the quality and prestige of any post-graduate program that is entered. In a more abstract sense, they also indicate something about the thoroughness and depth with which course materials were learned.

Table 6 contains OLS estimates of an equation that regresses the GPA earned by students during their first three terms at college on hours studied per week and

Table 6. Model predicting GPA earned by respondents to the NLSF during first three terms of college or university

Variable	B	SE
Theoretical Predictors		
Hours Studied per Week	0.003***	0.0004
Performance Burden	−0.001*	0.0006
Group Membership		
Whites	—	—
Asians	−0.020	0.018
Latinos	−0.155***	0.019
Blacks	−0.199***	0.034
Demographic Background		
Male	−0.053***	0.016
Foreign-Born Parent	0.018	0.015
Intact Family Growing Up	0.015	0.019
Number of Siblings <18	−0.000	0.007
Socioeconomic Status		
Neither Parent College Graduate	—	—
One Parent College Graduate	0.019	0.019
Both Parents College Graduate	0.096***	0.022
One Parent Advanced Degree	0.091***	0.019
Both Parents Advanced Degree	0.152***	0.023
Percent of College Paid by Family	−0.010	0.019
Academic Preparation		
Number of AP Courses Taken	0.009	0.006
High School GPA	0.427***	0.026
Self-Rated Preparation	0.034***	0.003
Institutional Selectivity		
Median SAT of School	0.000	0.0002
Intercept	1.207***	0.346
R^2	0.278***	
N	3,495	

*p < .10
**p < .05
***p < .01

performance burden, controlling for background characteristics. We began our analysis by testing for a possible interaction between the internalization and externalization of stereotypes in the determination of grade point average. Our thinking was that whereas it was detrimental to performance to have internalized negative stereotypes and detrimental to have externalized them, it was especially destructive simultaneously to have doubts about one's group and to expect to be judged negatively by others. However, we found no evidence of an interaction between the internalization and externalization of stereotypes and therefore concluded that the two effects operate independently in additive fashion.

As can be seen in Table 6, hours studied per week has a positive and highly significant effect on GPA: the more hours studied the higher the grades earned. At the same time, the felt performance burden is negatively related to academic performance: the more one feels that one is representing the group when performing academically, the lower the grades. The later effect, however is only marginally significant ($p < .10$). We would not necessarily expect performance burden to yield lower grades under all circumstances, however. In particular, we would expect the implicit threat to be much greater when Black and Latino students are called upon to perform before a White or Asian professor than before a member of their own group.

In order to test this extension of the hypothesis of stereotype threat, we computed the number of classes that each respondent reported being taught by a White or Asian versus a Black or Latino professor. We then determined the median number of minority versus majority faculty members and divided the sample into two groups: those with an above average number of Black and Latino faculty and those with a below average number of minority faculty. We expect that the negative effect of performance burden will be greater in the latter than the former case.

Table 7 presents two equations predicting GPA, estimated separately for students whose classes were taught by minority faculty members at a rate below the median and those whose classes were taught by minority faculty at a rate above the median. For the latter group, who perform before a relatively large number of Black and Latino professors, there is no evidence of a performance burden effect. Students may feel that they represent their race, but in the presence of significant minority faculty, inhibition of performance is not triggered. Moreover, the intergroup differentials, and particularly the Black-White differential with respect to grade point, is significantly moderated.

In contrast, in classroom contexts characterized by a notably low minority presence, the performance burden is strong and highly significant, with its coefficient essentially doubling in size compared to the one estimated in Table 6. When performing academically in classes characterized by a relative scarcity of minority professors, the psychological burden of "representing the race" apparently triggers inhibitions that reduce grade performance. At the same time, the Black-White differential that remains after controlling for variables in the model (-0.242) is much greater than that estimated when minority faculty are present in relatively large numbers ($-.170$), a difference that is statistically significant ($p < .05$), which suggests that the mechanisms hypothesized under the theory of stereotype threat are indeed at work in a broad population of students attending a range of different selective institutions. Indeed, the negative effect of African American origin on grade point estimated in Table 7 is half that obtained in a zero-order model containing only dichotomous indicators of group membership ($-.363$—see Massey and Fischer, 2002).

Table 7. Model predicting GPA earned by respondents to the NLSF during first three terms of college or university: High and low representation of minority faculty

	Low Minority Representation on Faculty		High Minority Representation on Faculty	
Variable	B	SE	B	SE
Theoretical Predictors				
Hours Studied per Week	0.002*	0.001	0.003***	0.001
Performance Burden	−0.002***	0.001	−0.000	0.0009
Group Membership				
Whites	—	—	—	—
Asians	−0.035	0.036	−0.010	0.020
Latinos	−0.157***	0.029	−0.155***	0.032
Blacks	−0.242***	0.031	−0.170***	0.050
Demographic Background				
Male	−0.085***	0.022	−0.029*	0.020
Foreign-Born Parent	0.024	0.032	0.015	0.015
Intact Family Growing Up	−0.001	0.031	0.026	0.023
Number of Siblings <18	0.001	0.013	−0.001	0.011
Socioeconomic Status				
Neither Parent College Graduate	—	—	—	—
One Parent College Graduate	−0.006	0.038	0.033	0.027
Both Parents College Graduate	0.093**	0.037	0.097***	0.031
One Parent Advanced Degree	0.078**	0.031	0.100***	0.031
Both Parents Advanced Degree	0.152***	0.036	0.148***	0.027
Percent of College Paid by Family	−0.004	0.028	−0.017	0.022
Academic Preparation				
Number of AP Courses Taken	0.007	0.008	0.013**	0.006
High School GPA	0.414***	0.035	0.431***	0.027
Self-Rated Preparation	0.030***	0.005	0.037***	0.004
Institutional Selectivity				
Median SAT of School	0.000	0.001	0.000	0.0003
Intercept	1.212***	0.294	1.229**	0.455
R^2	0.271***		0.289***	
N	1434		2,061	

*p < .10
**p < .05
***p < .01

CONCLUSION

In this article we have sought to bolster the external validity of research on the hypothesis of stereotype threat by specifying a structural model of the phenomenon and estimating it using data from a large population of students attending twenty-eight different institutions of higher education. We posited that the negative stereotype of Black and Latino intellectual inferiority would manifest itself psychologically in two ways. On the one hand, some minority students, by virtue of their experiences in society, will have internalized negative stereotypes to some extent and come to believe in the intellectual inferiority of Black and Latino students. On the other

hand, some minority students will have externalized negative stereotypes, coming to believe that Whites and Asians will necessarily draw on the stigma of intellectual inferiority in evaluating Black and Latino students. The internalization of stereotypes was hypothesized to lead to a disidentification with academic success and a subsequent reduction of work effort that translates into lower grades. The externalization of stereotypes was hypothesized to yield a performance burden that also lowered grade achievement.

Statistical estimates of structural equations specified to represent the foregoing model were generally consistent with the theory of stereotype threat. In particular, our analyses yield the following specific conclusions:

(1) There is variation in the degree to which Black and Latino students subscribe to the stereotype of minority intellectual inferiority, and this variation is related to students' social origins. Those most at risk of internalizing negative stereotypes appear to be Black and Latino males from affluent families who made few ingroup friends while growing up and who had developed a weak racial/ethnic identity.
(2) There is variation in the degree to which Blacks and Latinos expect others to draw on negative stereotypes in making evaluations. Those most prone to externalize stereotypes are Black and Latino females from a disrupted but well-educated family background who grew up under integrated circumstances but with a strong ingroup identity and a high perceived social distance from Whites. Dark-skinned minority respondents generally expect more stereotyping than those with light complexions.
(3) The internalization of negative stereotypes has a very strong effect in reducing weekly hours of study, suggesting a clear process of disidentification.
(4) The externalization of negative stereotypes is generally associated with a higher performance burden, though the relationship is not strong.
(5) Together weekly hours of study and the performance burden felt by respondents had strong and significant effects on grades earned during the freshman and sophomore years, holding constant academic preparation, demographic background, and socioeconomic status.
(6) The inhibiting effect of performance burden on grade point occurs only in classrooms where minority professors are scarce or absent. In the presence of minority faculty, the psychological performance burden experienced by minority students does not translate into lower performance, reinforcing the importance of increasing faculty diversity (see Cole and Barber, 2003).

The potential for disidentification and performance burden to influence minority performance is suggested by Figure 2, which shows the GPA predicted for Black students as hours of study and performance burden move from their minima to maxima. Holding other variables constant at the mean, we use the equation of Table 7 to generate predicted grade point averages for different combinations of disidentification and performance burden. With no disidentification and no performance burden, Blacks are predicted to earn a grade point of 3.13. At two standard deviations below the mean for both variables, the predicted GPA falls to around 3.03, and at one standard deviation below the mean it reaches 2.98. As one moves from the mean to one and then two standard deviations above mean levels of disidentification and performance burden, the predicted grade point for Blacks falls from 2.91 to 2.87 to 2.81. At maximum levels of disidentification and performance burden, the pre-

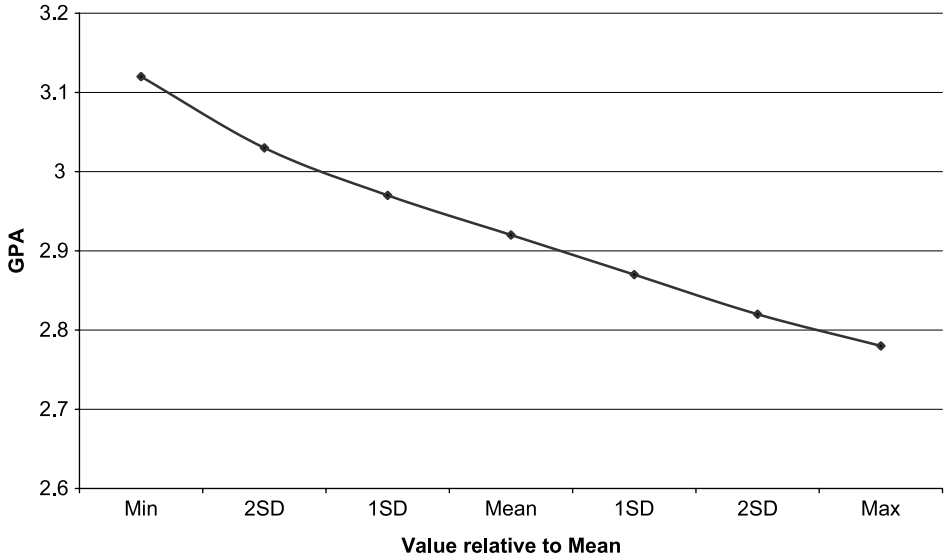

Fig. 2. Predicted grade point earned by Blacks at selected levels of disidentification and performance burden.

dicted GPA is 2.78. In other words, as Steele (1997, 1998) put it, influences seemingly as intangible as "a threat in the air" can have significant effects on the academic achievement of minority students.

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APPENDIX A. SOCIAL SCALES CONSTRUCTED FOR ANALYSIS OF STEREOTYPE THREAT

Stereotype Internalization		
Own group intelligent or unintelligent	0–6	
Own group hardworking or lazy	0–6	
Own group sticks with it or gives up easily	0–6	
Scale Range	0–18	$\alpha = 0.610$
Stereotype Externalization		
Expect Whites to Treat Others Equally or Discriminate	0–10	
Expect Asians to Treat Others Equally or Discriminate	0–10	
If instructors hold stereotypes will affect evaluation of group members	0–10	
If students hold stereotypes will affect evaluation of group members	0–10	
Scale Range	0–40	$\alpha = 0.588$
Performance Burden		
If instructors know my difficulty in class they will think less of me.	0–10	
If students know my difficulty in class they will think less or me.	0–10	
If I excel academically, it reflects positively on own group.	0–10	
If I do poorly academically it reflects negatively on own group.	0–10	
I don't want to look foolish or stupid in class.	0–10	
If I don't do well, people look down on others like me.	0–10	
How conscious of how Whites perceived you	0–10	
How conscious of how Asians perceived you	0–10	
How conscious of how teachers perceived you	0–10	
Scale Range	0–90	$\alpha = 0.714$
Social Distance to Whites		
Perceived Closeness to Young White Men	0–10	
Perceived Closeness to Young White Women	0–10	
Perceived Closeness to Rich Whites	0–10	
Perceived Closeness to Middle-Class Whites	0–10	
Perceived Closeness to Group in General	0–10	
Scale Range	0–50	$\alpha = 0.898$

Ingroup Identity		
Importance of ingroup identity (American = 0, Both = 1, Ingroup = 2)	0–2	
What happens to ingroup will affect me (none to a lot)	0–3	
Ingroup should vote for ingroup members	0–10	
Ingroup should shop in ingroup stores	0–10	
Ingroup should marry ingroup members	0–10	
Ingroup should give children ingroup names	0–10	
Ingroup should live in ingroup neighborhoods	0–10	
Scale Range	0–55	$\alpha = 0.746$

ACTUAL QUESTIONS FROM NLSF INSTRUMENT

Stereotype Internalization

Now I have some questions about different racial and ethnic groups in our society. I want you to rate each group on a 0 to 10 scale, where 0 means that no one in the group displays the characteristic or trait in question and 10 means that everyone does. A score of 5 would mean that half do and half don't share the trait.

Suppose, for example, that I ask you to judge how poor or rich a group is, where 0 indicates that all are poor and 10 indicates that all are rich. A score of 5 means that the group is half rich and half poor. In the United States, how rich would you say:

0 poor ..... 10 rich

Whites are?
Blacks are?
Latinos are?
Asians are?

The second set of characteristics ask if people in the group tend to be lazy or if they tend to be hardworking. On this scale, where would you generally place:

0 lazy ..... 10 hard-working

Whites?
Blacks?
Latinos?
Asians?

Do you think people in these groups tend to be unintelligent or intelligent? How about:

0 unintelligent ..... 10 intelligent

Whites?
Blacks?
Latinos?
Asians?

How about the characteristic of persistence, where people either give up easily or stick with a task until the end? In general, how persistent are:

0 give up easily …… 10 stick with it

Whites?
Blacks?
Latinos?
Asians?

Stereotype Externalization

Finally, think of a scale of discrimination. For each group I want to know if you think its members tend to treat members of other groups equally, or whether they tend to discriminate against people who aren't in their group. On this scale, how would you rate:

0 treat equally …… 10 discriminate against others

Whites?
Blacks?
Latinos?
Asians?

Using the same scale, how much do you agree or disagree with the following statements?

Total Disagreement Total Agreement
0 …… 10

If instructors hold negative stereotypes about certain groups, it will not affect their evaluations of individual students from that group.

If other students hold negative stereotypes about certain groups, it will not affect their evaluations of individual students from that group.

Social Distance to Whites

For the sake of completeness, we'll also consider different categories of Asians. For each category, on a scale of 0 to 10 tell me how close you feel to the people in terms of your ideas and feelings about things.

0 Very Distant …… 10 Very Close

Young White men
Young White women
Middle-class Whites
Rich Whites
Whites in general

Ingroup Identity

What do you think should be more important to Blacks/Latinos in the United States, being Black/Latino, being American, or should both identities be equally important?

To what extent do you think that what happens to each of the following groups will affect what happens to you in your life:

	0 Will not affect me at all	1 Will affect me a little	2 Will affect me somewhat	3 Will affect me a lot
Blacks?				
Latinos?				

On a scale of 0 to 10, please indicate the extent you agree with each of the following statements, where 0 means total disagreement and 10 indicates total agreement.

Total Disagreement Total Agreement
0 …… 10

Blacks/Latinos should always vote for Black/Latino candidates.
Blacks/Latinos should marry other Blacks/Latinos.
Black/Latino consumers should shop in Black-/Latino-owned stores.
Black/Latino parents should give their children African/Latino names.
Black/Latino students should attend predominantly Black/Latino schools.
Black/Latino families should live in predominantly Black/Latino neighborhoods.

Performance Burden

Using the same 0–10 scale, how much do you agree or disagree with the following statements?

Total Disagreement Total Agreement
0 …… 10

If I let my instructors know that I am having difficulty in class, they will think less of me.
If I let other students know that I am having difficulty in class, they will think less of me.
If I excel academically, it reflects positively on my racial or ethnic group.
If do poorly academically, it reflects negatively on my racial or ethnic group.
I don't want to look foolish or stupid in class
If I don't do well, people will look down on others like me.

How self-conscious were you about the way that White students perceived you, with 0 meaning you were not conscious at all and 10 meaning that you were extremely sensitive to what they thought?
0 Not conscious at all …… 10 Extremely sensitive

How self-conscious were you about the way that Asian students perceived you, with 0 meaning you were not conscious at all and 10 meaning that you were extremely sensitive to what they thought?
0 Not conscious at all …… 10 Extremely sensitive

How self-conscious were you about the way that your teachers perceived you, with 0 meaning you were not conscious at all and 10 meaning that you were extremely sensitive to what they thought?
0 Not conscious at all …… 10 Extremely sensitive