Extending the Concept of Stereotype Threat to Social Class: The Intellectual Underperformance of Students from Low Socioeconomic Backgrounds

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Extending the Concept of Stereotype Threat to Social Class: The Intellectual Underperformance of Students From Low Socioeconomic Backgrounds

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Students from poorer families perform worse on intellectual tasks than do other students. The authors tested the stereotype threat hypothesis as a possible explanation for this difference. Students from relatively poor backgrounds, such as members of other stereotyped groups, risk confirming a negative reputation of low intellectual ability. The authors predicted that, on a stereotype-relevant test, members of this group would experience apprehension about confirming their negative reputation and that this susceptibility to the stereotype would impair their performance. The study varied stereotype threat by manipulating the instructions accompanying the test that each participant completed. When described as a measure of intellectual ability, low socioeconomic status (SES) participants performed worse than high SES participants. However, when the test was presented as nondiagnostic of intellectual ability, low SES participants' performances did not suffer, contesting claims of SES differences in intellectual ability.

The only aspect of the relationship between socioeconomic status (SES) and intellectual ability that is not controversial is the fact that it is demonstrated repeatedly (Neisser et al., 1996). For example, a meta-analysis performed on 102 studies showed that the correlation between parental SES and children's IQ scores was .40 (White, 1982). Moreover, measures of parental SES predict achievement at work—about one third of the variance in young adults' social status and about one fifth of the variance in their income (Jencks, 1979). The relationship also extends to academic achievement. In France, for example, only 9% of people of low SES between 25 and 39 years of age had received a college degree in 1993 compared to 55% of the same age group from a high SES background. Moreover, people of low SES represent 61% of the population between 25 and 39 years of age who did not get any degree in school, whereas only 3% of people in this group are from a high SES background (Institut National de la Statistitique et des Etudes Economiques [INSEE], 1995).

Many explanations have been proposed to account for this dramatic difference in scholastic achievement between low and high SES individuals. Among the most popular is the suggestion that economic and cultural differences between the groups create differences in academic preparation. For example, poorer families might not have the money for educational resources such as books or even for physiological necessities such as adequate food (Ricciuti, 1993; Sigman, 1995). In addition, some authors have argued that there are cultural differences between SES classes that contribute to students' level of motivation and interest in academic work (Bourdieu & Passeron, 1964; Ogbu, 1994) or to students' linguistic adaptation to school (Bernstein, 1971). Others claim that intelligence has a genetic component that creates different levels of intellectual ability between social classes (Herrnstein & Murray, 1994).

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Another set of explanations for the difference in academic achievement between SES groups is rooted in society's conceptions of the ability, interests, and character of those who are poor. According to these theories, stereotypes produce a hierarchy of expectations and treatment and an allocation of resources that discriminates against individuals from low SES backgrounds. For example, researchers have documented that poor students are treated worse in the classroom than are middle class students (Gilly, 1984; Rist, 1970) and that this treatment may cause students to confirm teachers' negative expectations (Williams, 1976; for discussions, see Claire & Fiske, 1998; Jussim, Eccles, & Madon, 1996). Other theorists have explored the effects of socially pervasive beliefs on the internal state of targets of the stereotype (Crocker & Major, 1989; Crocker, Major, & Steele, 1998; Steele, 1992, 1997). These researchers have emphasized that in some situations, awareness of the stereotypes can influence targets to behave negatively, even in the absence of any concurrent negative treatment.

According to Steele (1992, 1997; see also Steele & Aronson, 1995), when a widely known negative stereotype (e.g., poor intellectual ability) exists about a group, it creates for its members a burden of suspicion that acts as a threat. This threat arises whenever individuals' behavior could be interpreted in terms of a stereotype, that is, whenever group members run the risk of substantiating the stereotype. For example, when African American students take an academic exam, they are subject to the threat that their behavior, if they fail, may confirm a reputation of low intelligence. When the stakes are high for the individual, the very possibility of substantiating a negative allegation may in fact impair performance because it is "self-threatening enough to have disruptive effects on its own" (Steele & Aronson, 1995, p. 797). In other words, such situations create an extra pressure that may interfere with performance. Depending on the situation of threat, several mechanisms may singly or simultaneously contribute to this "inefficiency of processing" (p. 809)—distraction from the task (e.g., Easterbrook, 1959), interfering self-consciousness (e.g., Baumeister, 1984), evaluation apprehension (e.g., Geen, 1985), test anxiety (e.g., Sarason, 1972), and loss of motivation (e.g., Pyszczynski & Greenberg, 1983).

In dramatic support for the stereotype threat hypothesis, Steele and Aronson (1995) showed that minor changes in testing situations that altered the amount of stereotype threat for a group produced significant differences in performance on an identical task. For example, when instructions described a test as a "measure of verbal abilities and limitations" (p. 799), Black students performed worse than White students, reflecting the previously documented differences in academic achievement between Whites and Blacks and the commonly held stereotype of Black academic ability. However, instructions that described the identical test as a study of the "psychological factors involved in solving verbal problems" (p. 799) rendered the test irrelevant to the stereotype and erased the differences in performance between the two groups. Analogous results were found for differences between men and women on a difficult test of mathematics ability (Spencer & Steele, 1994). Women performed worse than men in a standard testing context, confirming commonly held beliefs about gender differences in quantitative skills. However, another experimental condition introduced the test as one that typically elicits similar scores for men and women. With these instructions, women's performance on the identical exam matched that of men. Thus, an interaction between the social identities of these two groups and the immediate social context (i.e., the description and difficulty of the task) produced a situational predicament (i.e., a sense of stereotype threat) that depressed intellectual functioning.

Is it the case that the poor scholastic performance of students of lower SES also is due to stereotype threat? If so, then it might be possible to improve their intellectual performance with a simple change in test instructions, just as the performance of African Americans and women was altered in previous research. The present study was designed to test this hypothesis and to assess the generalizability of Steele's theory. To apply the stereotype threat hypothesis to social class, undergraduate students from high and low SES backgrounds completed a test composed of difficult items adapted from the verbal Graduate Record Examination (GRE). The magnitude of stereotype threat was varied through instructions that described the test as relevant or irrelevant to the stereotype of low SES students (i.e., that they lack intellectual ability). In the ability diagnostic condition, the test was described as a measure of verbal intelligence. These instructions were predicted to heighten stereotype threat and result in poorer performance for low SES students as compared to high SES students. In the ability nondiagnostic condition, the test was described as an investigative tool for studying hypotheses about lexical processes. Because this second set of instructions grouped participants instead of discriminating between them on the basis of ability, they were predicted to minimize stereotype threat, enabling low SES students to perform as well as their high SES peers. High SES students were expected to perform equally well in both diagnostic conditions because the stereotype does not apply to them in either situation.

Because membership in SES groups might not be as salient as gender or racial group membership, we also sought to investigate whether the ability diagnosticity of the test instructions is enough to trigger a disruptive

threat for low SES students or whether members of this group would underperform only when their economic status was made salient to them. To study the effects of the salience of participants' SES membership, half of the participants were asked to indicate their parents' occupation and education level before they completed the test. Participants in the nonsalient conditions completed filler questions and never were queried about their SES level.

Participants' performance on the test served as the study's primary dependent measure. In addition, before completing the test, participants answered questions about their level of readiness. These questions measured any differences in apprehension about performance among the groups. We predicted that evaluation apprehension, as measured by the degree to which participants claim impediments to performance (self-handicapping), would be higher for low SES participants in the diagnostic condition as a result of the risk of validating the negative stereotype. These self-handicapping measures (Jones & Berglas, 1978) provided information about the extent to which stereotype threat affects individuals' conscious experience of the challenge and difficulty of the test.

METHOD

Design and Participants

The experiment took the form of a $2 \times 2 \times 2$ factorial design. The independent variables were the SES of the participants (low or high), the salience of the participants' SES (salient or nonsalient), and the type of description accompanying the task (ability diagnostic or ability nondiagnostic). A total of 298 French undergraduates completed the task in the context of an introductory psychology course. (All verbal and written material was presented to students in French and translated here into English.) The data from 145 students, who were classified as neither low nor high in SES, and from 3 members of ethnic minority groups, all North Africans, were excluded from the analyses. In addition, the data from a randomly selected group of 22 students were excluded to ensure an equal number of participants per condition. This left a total of 128 native French speakers who were randomly assigned to the four (Salience × Diagnosticity) experimental conditions.[1]

Procedure

An experimenter introduced the task to the class as an investigation in the area of cognitive psychology. Participants were told that they would work on a set of verbal problems for 25 minutes and that their work was confidential and unrelated to their course grade. The questionnaires were completed in the presence of eight proctors to dissuade students from looking at others' responses. The questionnaires were identical for all participants except for some key phrases that presented the experimental manipulations. To ensure a random assignment of participants to experimental conditions, the questionnaires were shuffled before distribution. The first page of the questionnaire stated the purpose of the study, described how students should mark their answers, and described the test as very difficult. Participants were asked to put a lot of effort into the task despite its difficulty. They were informed that they would be given feedback on their performance as soon as possible if they requested it.

Ability diagnosticity manipulation. Participants in the ability diagnostic condition were informed that the study aimed to "assess your intellectual ability for solving verbal problems." These students were informed that the difficulty of the task was necessary to get a reliable measure of their verbal ability. Participants in the ability nondiagnostic condition were informed that the study aimed to "test several hypotheses about the role attention plays in the functioning of lexical memory." These students learned that the difficulty of the task was necessary to obtain a stronger test of the researchers' hypotheses. A sample item and its solution was provided to both groups to demonstrate the level of difficulty.

SES classification. On the second page of the questionnaire, participants were asked to provide some background information—first name, first three letters of last name, year of birth, and number of years they studied at the university. This information was used to acquire the participants' SES level from the university's administrative records. Each student's record contains a category code describing his or her parent's occupation. This code is assigned by the INSEE and describes the occupation of the "main provider" (father or mother) of the family. Participants retained for the low SES condition included the children of manual labor workers (83%), unemployed persons (8%), administrative workers (6%), and some miscellaneous occupations (3%). Administrative records showed that all the participants in the low SES condition were funded by the French Department of Education as a result of their economic difficulties. The participants retained for the high SES condition were children of managers (76%), other professionals (13%), and researchers and college professors (11%). None of the families of participants in this group was funded by the French Department of Education.

Manipulation of SES salience. Participants randomly assigned to the salient SES conditions were asked to indicate their parents' occupation and education level by checking one of the following for each parent: end of primary school, end of junior high school, end of high

school, or some college-level classes. Participants in the nonsalient condition were asked to give some nonrelevant information about the size of the town in which they live.

Readiness measures. On the third page of the questionnaire, participants were asked to supply information that would help the researchers assess their ability to concentrate on the test. They were asked to indicate, on a 7-point scale, how well they slept the night before (ranging from *very badly* to *very well*), how much stress they had been under the week before the test (*no stress* to *a lot of stress*), their current level of personal worries (*none* to *a lot*), their current ability to concentrate (*not able* to *very able*), their current level of motivation (*very low* to *very high*), and their current physiological state (*very weak* to *very good*).

Participants then were allowed 15 minutes to complete the verbal task, which was comprised of 21 items similar to those found on the GRE such as the following example:

> Select the lettered pair that best expresses a relationship similar to that expressed in the original pair.
> MERCENARY – MONEY
> (a) vindictive : revenge
> (b) scholarly : library
> (c) immaculate : cleanliness
> (d) thirsty : water
> (e) belligerent : invasion

(The correct answer is (a).) The order of questions was varied to discourage students from looking at others' answers. Students' performance on the exam was measured by the total number of items correct, the number of items attempted, and an accuracy index of the number correct divided by the number attempted.

RESULTS

Readiness Measures

In the ability diagnostic condition, low SES students were expected to claim more impediments to performance before taking the test because of their apprehension about validating a negative stereotype. However, the 2 × 2 × 2 analyses of variance (ANOVAs) performed on each of the six self-handicapping measures (sleep, stress, ability to focus, motivation, personal worries, and physiological state) did not support this prediction. When the test was presented as a measure of intellectual ability, low SES students did not claim more excuses for poor performance than did other participants (all p's for the SES × Diagnosticity interaction not significant). The analysis did yield a significant main effect of the salience manipulation on the extent of personal worries participants were experiencing, $F(1, 120) = 3.99$, $p < .05$. Participants who indicated their parents' occupation and education level reported having fewer personal worries ($M = 3.56$) than did participants for whom SES presumably was less salient ($M = 4.20$). The analyses also showed a significant main effect of participants' SES on ratings of their physiological state, $F(1, 120) = 5.34$, $p < .03$, such that low SES participants reported a better physiological state ($M = 5.41$) than did high SES subjects ($M = 4.48$). Although these results did not confirm the self-handicapping hypothesis, they did show that there were no a priori differences on these measures between high and low SES respondents that could explain poor performance by low SES students.

Test Performance

Number of correct answers. According to our main prediction, low SES participants would experience stereotype threat that would disrupt their performance only in situations where the stereotype potentially applied to their behavior (i.e., only in the ability diagnostic condition). In situations where the allegation of poor performance was less applicable (i.e., in the ability nondiagnostic condition), these students were expected to be unaffected by the stereotype and to perform better on the test. This hypothesis was strongly supported by the analyses. The 2 × 2 × 2 ANOVA on the number of correct items revealed a significant interaction between the diagnosticity of the task and the SES of the participants, $F(1, 120) = 9.38$, $p < .003$. No other effects reached significance. Bonferroni contrasts revealed that, consistent with the stereotype threat hypothesis, low SES participants in the diagnostic condition performed worse ($M = 8.94$) than low SES participants in the nondiagnostic condition ($M = 11.44$), $t(120) = 3.12$, $p < .003$; worse than high SES participants in the diagnostic condition ($M = 11.25$), $t(120) = 2.89$, $p < .005$; and worse than high SES participants in the nondiagnostic condition ($M = 10.28$), $t(120) = 1.68$, $p < .10$ (see Figure 1).

Number of items attempted. Another measure of performance is the speed with which participants answered questions, as measured by the number of items they attempted to answer in the allotted time. The 2 × 2 × 2 ANOVA on the number of items attempted also supported the stereotype threat hypothesis. The predicted interaction between diagnosticity and SES was marginally significant, $F(1, 120) = 3.66$, $p < .06$. No other significant effects emerged. Bonferroni contrast revealed that low SES respondents who thought that the test was diagnostic of ability completed fewer items ($M = 18.91$) than did low SES respondents in the nondiagnostic condition ($M = 20.25$), $t(120) = 2.28$, $p < .03$. Although not significant, low SES respondents in the diagnostic condition tended to complete fewer items than did high

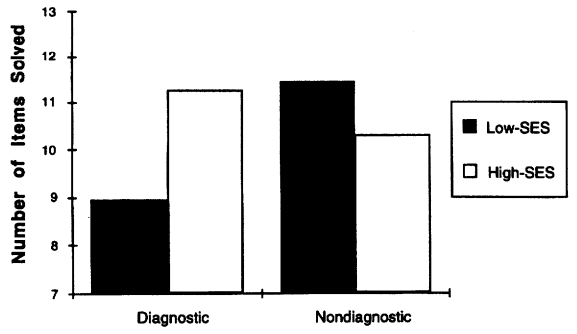

Figure 1. Number of items correctly solved as a function of diagnosticity of the task and participants' socioeconomic status.

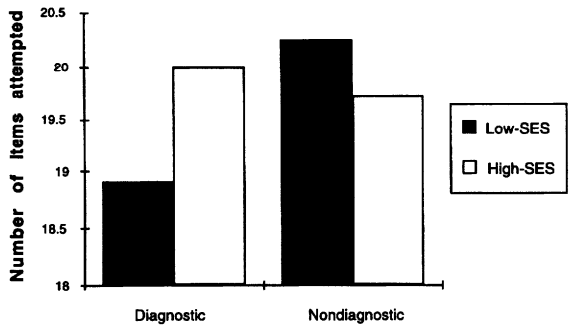

Figure 2. Number of items attempted as a function of diagnosticity of the task and participants' socioeconomic status.

SES participants in the diagnostic condition ($M = 19.97$), $t(120) = 1.80$, $p < .08$, and high SES participants in the nondiagnostic condition ($M = 19.72$), $t(120) = 1.38$, $p = .17$ (see Figure 2).

Proportional accuracy. If test diagnosticity depresses the performance of low SES respondents by increasing stereotype threat, then the accuracy of participants in this condition should be lower than that of participants in the other three conditions. The $2 \times 2 \times 2$ ANOVA on accuracy (the number of items correct divided by the number attempted) yielded precisely this result, supporting the stereotype threat hypothesis. As with the measures of test performance and speed, there was only one significant effect—an interaction between the diagnosticity of the task and participants' SES, $F(1, 120) = 5.86$, $p < .02$. Bonferroni contrasts revealed that low SES participants were less accurate ($M = 0.47$) than low SES participants in the nondiagnostic condition ($M = 0.56$), $t(120) = 2.48$, $p < .02$, and were less accurate than high SES participants in the diagnostic condition ($M = 0.56$), $t(120) = 2.40$, $p < .03$. Although not significant, the difference in accuracy between low SES participants in the diagnostic condition and high SES participants in the nondiagnostic condition ($M = 0.53$), $t(120) = 1.38$, $p < .15$, also was in the predicted direction (see Figure 3).

DISCUSSION

We predicted that because of stereotypes about social class, students from a low SES background are subjected to doubts about their intellectual ability that are similar in kind to the negative allegations experienced by African Americans and women. In accordance with Steele's (1997) theory, we assumed that being a target of this negative group-level reputation creates a sense of stereotype threat in students from a low SES background in any situation where the stereotype of lesser ability could be used to interpret their behavior. The aim of the present study was to demonstrate that this threat has disruptive effects and, as a consequence, could substantially interfere with the performance of low SES students on an academic task. The results strongly support this hypothesis. Participants from a low SES background performed worse than participants from a high SES background when an intellectual test was presented as a measure of their verbal intellectual ability. They gave fewer correct answers, completed fewer test items, and were less accurate on the items they did complete. However, low SES students' performance matched that of the high SES group when the test was not presented as a measure of intellectual ability. Not only did these students perform better on the identical test than low SES students who received other test instructions, they also performed as well as high SES participants on each of the three indicators: number of correct answers, number of items attempted, and accuracy.

Is There a Relationship Between SES and Intellectual Ability?

These results are most striking in their contribution to the debate about the existence and origin of a relationship between SES and intellectual ability. If prolonged exposure to stereotypes results in a systematic vulnerability to impaired performance in certain testing situations for low SES students, then the tests themselves corrupt assessment of these students' ability. Because most testing situations do divulge the purpose of the test, past examinations of the relationship between SES and ability are likely to have reflected these distortions and helped to reinforce the stereotype. In the present study, students from low SES backgrounds were able to perform as well as other students if the test was not presented as a measure of their intellectual ability. These results suggest that the context of the test has a tremendous effect on members of low SES groups and that a test must be carefully designed to provide more accurate predictions of this group potential.

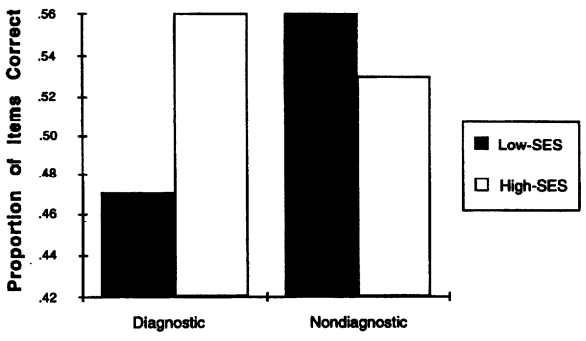

Figure 3. Proportion of items correct as a function of diagnosticity of the task and participants' socioeconomic status.

What Does the Relationship Between SES and Intellectual Ability Mean?

Not only do these results raise questions about the extent of the relationship, they also may inform debates about the nature of differences that have been measured between SES groups. If there are structural or genetic contributions to differences between these groups, then they were not manifest in the ability nondiagnostic condition of this study. It is possible that this particular measure of intellectual ability was not sensitive enough to detect differences between the groups. However, the change in performance between low SES students in the diagnostic and nondiagnostic conditions suggests that differences between low and high SES groups found in other studies might be largely due to the effects of stereotype threat on low SES individuals.

The Contribution to the Stereotype Threat Hypothesis

These results extend the generalizability of Steele's (1997) concept of stereotype threat from racial and gender groups to economic ones, supporting his analysis that group members experience threat whenever a negative allegation about them is relevant to the situation and might be applied to their behavior. In many cultures, ethnic minorities are disproportionately poor, so that people who are subject to the threat of class-related stereotypes also are subject to ethnic stereotypes. However, participants in this study happened to be members of the White majority group, so we can be relatively confident that it was participants' socioeconomic backgrounds that created differences in the stereotype diagnostic conditions. As Steele observed, stigmatized groups experience different forms and degrees of stereotype threat because the stereotypes for which they are targets differ in content, scope, and the situations to which they apply. The class stereotypes manifest in the present study have a long history in French society. The belief in natural and inherited abilities to explain the underachievement of people of low SES backgrounds justified the presence of the upper socioeconomic class in a so-called "egalitarian" society as early as the middle of 19th century (Bisseret, 1974). With regard to the cultural generality of these results, stereotype threat should contribute to the underperformance of low SES students in any cultural context where the academic underachievement of this group is associated with a widely shared explanation of personal limitation (i.e., lower ability). This might not be the case at different historical times or in cultures where social class and its "hierarchy-legitimating myth" (Pratto, Sidanius, Stallworth, & Malle, 1994, p. 747) are not or are less socially relevant.

This study complements previous work on stereotype threat by demonstrating the importance of the situational context of performance with a non-American population. By providing another operationalization of stereotype threat, it serves to triangulate Steele's original concept. However, like the others, this study did not measure threat directly. Instead, it varied instructions predicted to be relevant or irrelevant to participants' stereotypes. Future studies must demonstrate both the existence of the threat and the manner by which it impairs performance. They also should include significant numbers of both genders to test whether men and women of low SES backgrounds are subject to the effects of stereotype threat.

Although the effects of SES and ability diagnosticity on the main dependent measures were consistent with the stereotype threat hypothesis, it should be noted that they did not support the self-handicapping predictions. This requires some explanations, albeit post hoc ones. Contrary to previous studies, participants who were expected to experience threat did not report apprehension, as measured by claims of impediments to their performance (see also Steele & Aronson, 1995, Experiments 1 and 2). Perhaps the level of stereotype threat in this situation was enough to impair performance but not enough to engender self-handicapping. Although participants were told that the task was difficult, they had seen only one sample question with its solution at the time they were asked to complete the self-handicapping measures. Alternatively, this lack of results may inform our understanding of the process of stereotype threat. If it is possible for stereotype threat to operate on an unconscious level, then it may impair individuals' performance without inducing more active attempts to provide excuses for poor performance. This would explain the different levels of performance of low SES participants in the ability diagnostic and nondiagnostic conditions without a corresponding difference in handicapping.

Interestingly, these results demonstrated that the disruptive effect caused by stereotype threat was not mod-

erated by the salience of respondents' SES. Asking students about their parents' occupation and income level was not necessary to produce differences in performance between low SES students in the diagnostic and nondiagnostic conditions. Nor was salience of SES effective in intensifying this difference between the groups. It may be that those students carry knowledge of their SES level and its societal connotations, making it impossible to raise their current level of awareness. Alternatively, the fault might lie with the weakness of the operationalization. Asking students about their parents' occupation and education level might not have been effective in producing thoughts about their social class.

Taken together, these results show that the manipulation of a testing situation through minor changes in instruction is enough to cause important differences in the intellectual performance of people from a low SES background. Test instructions that mentioned intellectual ability produced an inefficiency of processing, the specificity of which needs to be investigated in further research. This interference disappeared when low SES group members were not threatened, that is, when they did not face the risk of confirming the society's allegation of lower ability. The difference between the performance of these two groups suggests that stereotype threat should not be neglected as an explanation of the underachievement of low SES students. Even more important, it suggests that exposure to, or even discrimination based on, class stereotypes has not diminished the abilities of these students unalterably and that, given the right situation, they can demonstrate performance that is equal to that of their peers.

NOTE

1. Of the 128 participants, 16 were men, and they were evenly distributed across the eight groups (from 1 to 3 men per group). There were not enough men to assess the possible interaction between gender and SES on stereotype threat response. However, analyses of the women's data yielded identical results to those reported here.

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