Becoming a Role Model, Acknowledging Obstacles, Combating Stereotype Threat

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Abstract

In the present work, we tested an intervention aimed at improving ethnic minorities’ test performance by reducing stereotype threat. Black and Hispanic college students were randomly assigned to speak on camera either about extracurricular activities or obstacles they had faced in academia, with the critical condition asking participants to become a “role model” for academically at-risk youth. All participants then completed a difficult math and verbal test. We hypothesized that participants in this role model condition would experience less stereotype threat, as evidenced by better test performance. Contrary to our hypothesis, participants in the role model condition did not perform better on the test; however, secondary analyses revealed that participants who referenced uncontrollable external obstacles performed better relative to those who did not.
BECOMING A ROLE MODEL

Becoming a Role Model, Acknowledging Obstacles, Combating Stereotype Threat

Racial disparities in academic achievement have been observed at all stages of education. Compared with white and Asian students, black and Hispanic students under-perform in primary and secondary school and in higher education (Institute of Education Sciences [IES], 2011; American Council on Education, 2011). Not surprisingly then, they are less likely to graduate from 4-year universities (American Council on Education, 2011). These racial/ethnic differences in academic performance and attainment are likely multiply-determined. Scholars, policy makers, and laypeople have all proposed potential causes, ranging from structural to cultural factors. For example, some have argued that poverty and lack of access to educational opportunities contribute to racial/ethnic disparities in education (Lareau, 1987). Others claim that oppositional cultural norms—such as the desire to not “act white”—among black and Hispanic youths are the problem (Ogbu, 2004).

More recently, social psychological research has shown that psychological processes also play a role. Specifically, research has shown that black and Hispanic students may often experience “stereotype threat”; that is, anxiety that one may behave in ways that confirm negative stereotypes about his or her social group (Aronson, Quinn, & Spencer, 1998). This anxiety in turn undermines students’ test performance (Steele, 1997; Spencer, Steele, & Quinn, 1999; Osborn, 2001). The phenomenon of stereotype threat was first demonstrated in a now classic social psychological experiment conducted by Steele and Aronson (1995). In this study, black and white college students were administered a difficult verbal exam and told that it was either diagnostic or non-diagnostic of their verbal ability. The study found that when the test was described as non-diagnostic, black students performed just as well as white students; however, when the test was described as diagnostic of verbal ability, black students performed
significantly worse relative to white students. White students' test scores were not affected by condition. These results demonstrate that when students are in settings where stereotypes about their social group(s) are relevant and might be applied—in this case, black students in an educational setting where the stereotype that “blacks are not as intelligent as whites” might be applied—performance declines. This finding has been replicated numerous times (for recent review, see Schmader, Johns, & Forbes, 2008; Shapiro & Neuberg, 2007; Steel, Spencer, & Aronson, 2002).

More recently, research has begun to investigate ways to reduce stereotype threat. This research has identified two general strategies: (1) self-affirmation and (2) role models. Research on self-affirmation has consistently shown that having minority students’ write about their most cherished values as opposed to their least cherished values can increase self-efficacy and self-worth, and inoculate against stereotype threat (e.g., Cohen, Garcia, Apfel, & Master, 2006; Cohen, Garcia, Purdie-Vaughns, Apfel, & Brzustoski, 2009). One study, for example, randomly assigned black and white students to write about their most cherished value (self-affirmation condition) or least cherished value (control condition; Cohen, Garcia, Apfel, & Master, 2006). Results showed that black students in the self-affirmation condition achieved better grades at the end of the semester compared to black students in the control condition. White students’ end-of-semester grades were not affected by condition. These results demonstrate that self-affirmation can improve the academic performance of historically stigmatized groups by promoting self-worth and, consequently, alleviating the anxiety triggered by stereotype threat.

Although self-affirmation appears to be a relatively straightforward intervention, it may have some strict boundary conditions (Dee, 2012). That is, self-affirmation may be likely to work only under some circumstances (e.g., in classrooms where teachers are responsive to self-
affirmation). Reducing and eliminating stereotype threat may thus require more than self-affirmation. More recent research suggests that role models may play a critical role in reducing stereotype threat. For example, in one study (Stout, Dasgupta, Hunsinger, & McManus, 2010), researchers randomly assigned female college students majoring in science, technology, engineering, and math (STEM) fields to take a difficult math exam by either a female or male researcher who was perceived to be an expert in math. The study revealed that participants who were administered the math exam by a female researcher increased their effort on the exam and showed an increased identification with math compared to participants who were administered the math exam by a male researcher. The researchers concluded that being exposed to an in-group role model in an academic domain can protect one’s identification with the academic domain in spite of being negatively stereotyped in that domain (see also Marx & Roman, 2002; Marx, Ko, & Friedman, 2009; Aronson, Jannone, McGlone, & Johnson-Campbell, 2009).

Of course, “role model” interventions have limitations as well. For many black and Hispanic students, in-group role models in higher education are scarce. Moreover, these potential role models cannot be active role models for all minority students on campus; they simply do not have the time to do so. Thus, black and Hispanic students will need other strategies to combat stereotype threat. The present work tests such a strategy, building on research on self-affirmation and role models. Specifically, it tests whether having black and Hispanic students become in-group role models—role models for the next generation—can provide a similar buffer from stereotype threat. We hypothesize that participants randomly assigned to perceive themselves as role models will perform better on a difficult math and verbal exam compared to students who are not. This intervention—having minority group members think of themselves as role
models—might provide an effective and more efficient way of combating stereotype threat and, as a result, improving academic performance.

**Participants**

Eighty-one African American, Hispanic, and bi-racial undergraduate students (17 men, $M_{\text{age}} = 18.50, SD = .46$) attending a large public university were recruited to participate in the current study in exchange for credit toward a course requirement or a $10$ gift card. All students gave written consent prior to participation. Among the students, $71\%$ identified as African American, $22\%$ identified as Hispanic/Latino, and the remaining $7\%$ identified as bi-racial (i.e., partially black or Hispanic/Latino). Twenty-three students were excluded from data analysis: two students were excluded because they did not identify as African American or Latino (a pre-condition for participation) and $21$ foreign-born students were excluded because of their presumed lack of familiarity of American stereotypes. Indeed, it is telling that including these students in the analyses below weakens the results. The final sample consisted of $58$ students.

**Materials**

**Math-verbal test.** The test comprised of $24$ questions ($12$ math and $12$ verbal) from a Graduate Record Examination (GRE) test. As in previous work (Steele & Aronson) test scores were computed by averaging the number of questions answered correctly out of the number of questions attempted.

**Self-efficacy scale.** A modified version of a self-efficacy scale (Bandura, 2000) was used to access participant’s self-efficacy for their academic goals. Participants were asked to indicate their agreement with such statements as, “I have the ability to reach my academic goals.” on a $7$ point Likert scale ranging from $1$ (not at all) to $7$ (very). In our sample, the internal consistency of this scale was low, $\alpha = .55$, and thus we do not use it.
Racial identity scale. A modified version of two subscales of the Revised Multidimensional Inventory of Black Identity (MIBI; Sellers, Rowley, Chavous, Shelton, & Smith, 1997) was used to assess participant’s racial identity. To ensure that items in the revised MIBI were relevant to the racial identities of both black and Hispanic participants, the word “black” was changed to “racial/ethnic” (e.g., I have a strong sense of belonging to people of my racial/ethnic group”). All items were rated using a 7-point Likert scale ranging from 1 (not at all) to 7 (very). The internal consistency of this scale was adequate, \( \alpha = .82 \). Unfortunately, we did not have enough participants in each condition to look at the moderating effects of racial identity on test performance.

Procedure

Students were greeted by one of three white experimenters, taken to a private lab room, and informed that the purpose of the study was to investigate students’ self-views and experiences at school. Participants were randomly assigned to one of four conditions. All participants started the study with a video task that asked them to speak about different aspects of their academic journey while being videotaped. In the control condition, participants were asked to speak about their academic journey and to focus on extracurricular activities. Participants in the stereotype threat condition were asked to speak about their academic journey and to focus on their obstacles. Participants in the self-affirmation condition were asked to speak about their academic journey and how they surmounted their obstacles. In the role model condition, participants were also asked to speak about their academic journey and how they surmounted their academic obstacles. In addition, they were led to believe that their video would be shown to academically at-risk youth of the same race/ethnicity in an effort to inspire these youths to achieve.
All participants then completed the self-efficacy questionnaire. Participants where then told by the experimenter that they were going to be given 20 minutes to complete a math and verbal exam. As in previous research (Aronson et al., 1998), participants in the control condition were told that the exam was not diagnostic of their math and verbal ability, but rather was designed to measure how students take tests. Participants in the three experimental conditions (stereotype threat, self-affirmation, and role model conditions) were told that the exam was diagnostic of their math and verbal ability. When participants finished the exam, they completed the racial identity questionnaire.

**Results**

**Primary analyses**

To test our main prediction, we conducted a one-way between-participant ANCOVA with test score as the outcome measure, condition as the predictor variable, and household income as a covariate\(^1\). Results revealed a significant main effect of condition, \(F (3, 53) = 2.90, p < .04\). However, post-hoc comparisons comparing the stereotype threat condition to the other 3 conditions revealed unexpected differences. See Figure 1 for means and comparisons. Notably, participants in the stereotype threat condition did better than those in the control condition, \(F (3, 53) = 7.69, p < .001\).

**Secondary Analyses**

The current findings are surprising given extant research on stereotype threat. Like other researchers, we increased the salience of race and administered a diagnostic test in the stereotype threat condition. Yet, unlike other researchers, we found improved performance in this condition relative to other (control and intervention) conditions. Upon closer examination of participants’

\(^1\) Unlike previous research on stereotype threat, we did not include SAT scores as a covariate. However, considering the known correlation between SAT scores and social economic status, we control for socioeconomic status (i.e., household income) as a close proxy.
videos, however, we realized that participants in the stereotype threat condition were more likely to mention obstacles that were uncontrollable and external. For example, many participants mentioned poor high schools and teachers’ negative racial attitudes as reasons for their academic failures. That is, they did not blame themselves for their academic shortcomings. Rather, they attributed academic challenges and failures to external conditions that they could not control. To investigate whether these attributions might be related to students’ performance on the test, we coded participants’ videotapes for the type of obstacles they mentioned (controllable/uncontrollable, internal/external). We then examined whether these obstacles affected test performance, again controlling for household income. Results revealed that participants who mentioned uncontrollable and external factors performed significantly better than students who spoke about controllable and internal obstacles, $F(1, 54) = 9.89, p = .003, M = .50$ and $M = .36$, respectively.

**Discussion**

The current study tested whether perceiving oneself as a role model can improve test performance among black and Hispanic students. Contrary to our hypothesis, we found that students who were randomly assigned to perceive themselves as a role model did not perform significantly better on the test compared to students in the stereotype threat condition. In fact, participants in the stereotype threat condition performed better on the test compared with participants in the control condition. These results run contrary to past research. Previous research has shown that reminding students of their race/ethnicity and giving them a “diagnostic” test leads to stereotype threat and undermines performance. Although we reminded participants in the stereotype threat condition of their race/ethnicity and asked them to complete a “diagnostic” test, they performed better than participants in the control condition who were not
reminded of their race/ethnicity and who were asked to complete a “non-diagnostic” test. Previous research has also shown that having in-group role models can reduce stereotype threat (Stout et al., 2011). Again, contrary to prediction, participants in the role model condition did not perform any better than those in the stereotype threat condition.

Our unexpected findings imply one of two possibilities: (1) our stereotype threat condition did not induce stereotype threat or (2) participants in the stereotype threat condition effectively coped with that threat. Our data suggest the latter may be true. Secondary analyses revealed that students who attributed academic obstacles and failures to uncontrollable external factors such as bad schooling or teacher prejudice performed significantly better than those who did not attribute obstacles and failures to such factors. These results are consistent with some previous research demonstrating that mis-attributing stereotype threat to external factors can improve test performance (Johns, Schmader, & Martens, 2005; Stone, Lynch, Sjomeling, & Darley, 1999; Brown & Josephs, 1999). One study (Brown & Josephs, 1999), for instance, found that when female college students were given an external and uncontrollable reason for potentially not doing well on a math exam (i.e., the computer used to practice for the exam crashed), their performance on the exam improved significantly. These findings suggest that attributing ones performance concerns to external factors can help alleviate stereotype threat and thus improve test performance. More generally, our results are consistent with research on self-serving attributions (i.e., attributing positive things to internal dispositions and negative things to external factors). This research has shown that attributing academic failures to unstable factors (e.g., lack of familiarity with college tests) can lead to greater effort and better grades in the short and long term (Wilson & Linville, 1985).
Although our findings are suggestive, it is important to remember that we did not set out to test whether acknowledging certain types of obstacles would reduce stereotype threat and improve performance. The current study did not manipulate the type of obstacle participants referenced (i.e., controllable/internal vs. uncontrollable/external). To test the claim that acknowledging uncontrollable external obstacles leads to better performance, we need experimental evidence. We are currently conducting a second study to provide that kind of evidence. In this study, participants are randomly assigned to either acknowledge external and uncontrollable obstacles (experimental condition) or not (control condition) before taking the same difficult test as was used in the present study. We predict that students who are reminded that (at least some of) their obstacles are outside of their control will experience less stereotype threat, as evidenced by better performance on the test. If this prediction is supported, then the present line of work may provide a new way of combating stereotype threat, albeit not the way that was originally intended.

In Summary

Almost two decades of research has shown that stereotype threat undermines minority students’ academic performance and contributes to the achievement gap between white and minority students. In the present work, we tested a new intervention for combating stereotype threat: having minority students become role models for youths in their community. Our results suggest that our intervention failed but that another intervention might be viable. Specifically, our results suggest that having students acknowledge uncontrollable and external factors they have faced and continue to face can reduce stereotype threat and improve academic performance. Although these findings were unexpected, they are consistent with previous work, both in and out of the stereotype threat literature. Future work will need to further investigate the viability of
this intervention. In time, it may prove to be a fruitful approach to reducing stereotype threat and closing the achievement gap between white and minority students.
References


Figure 1. Participants mean percentage test score as a function of condition.
Figure 2. Participants mean percentage test score as a function of type of obstacle they reflected on during the video portion of the study.