

Stereotype Threat and the Racial Achievement Gap: Race, Salience of Race, and Perception of

Race as Possible Contributing Factors

Scientist

Tulane University

STEREOTYPE THREAT AND THE RACIAL ACHIEVEMENT GAP

Abstract

The clear achievement gap between African American students and White students indicates a serious social problem. Past research suggests that one reason for this gap might be the psychological burden of “stereotype threat” African Americans experience in academic tasks, and the different effect race, salience of race, and importance of the task as a measure of intelligence. The proposed study will look at the effect of these variables on anxiety and test performance in a sample that will likely be made up mostly of White and African American undergraduate students ages 17-22. Results of this study may lend greater understanding to the factors influencing stereotype threat, and thus how to effectively mitigate these factors and reduce the racial achievement gap.

STEREOTYPE THREAT AND THE RACIAL ACHIEVEMENT GAP

Stereotype Threat and the Racial Achievement Gap: Race, Salience of Race, and Perception of Race as Possible Contributing Factors

In today's "knowledge-driven" economy, it has become clear that the easiest route to social equality is education (Aronson, Fried & Good, 2001; Hershberg, 1998). And so, the fact that African Americans are performing lower than White at every level in their academic careers indicates a clear social problem (Aronson, Fried & Good, 2001; Jencks & Phillips 1998). The lower performance of African American students (in comparison to White students) on achievement test scores and other academic measures is often referred to as the "black-white achievement gap" and is well documented in the United States (Hedges & Nowell, 1999; Huang, 2009). This issue continues to be a problem in higher education, research indicating that African American students tend to get lower grades in college than White students, even when they entered college with the same test scores (e.g. SAT scores) (Aronson, Fried & Good, 2001; Jencks & Phillips 1998). The black-white achievement gap is a serious issue that must be resolved, as it perpetuates racial inequality and negative stereotypes about African Americans.

There are many possible explanations for the black-white achievement gap, most of them based centering on the nature-nurture debate, positing environmental or genetic factors as the reason for the gap (Aronson, Fried & Good, 2001). These explanations are problematic, however, because the black-white gap persists even after controlling for background differences (Bowen & Bok, 1998; Owens & Massey, 2011). Further, black students graduate at lower rates, get lower grades, and perform more poorly on exams than environmental factors and objective characteristics like family income, parental education level, and SAT scores predict (Espenshade & Walton-Radford, 2009; Owens & Massey, 2011). This evidence suggests that

STEREOTYPE THREAT AND THE RACIAL ACHIEVEMENT GAP

there are additional factors (beyond genetic or structural environmental factors) creating the black-white achievement gap. The most plausible and well-documented explanation is that “stereotype threat” is contributing to lower achievement of African Americans (Aronson, Fried & Good, 2001).

Research by Sherman and Cohen by indicates that humans are naturally motivated to promote self-integrity, defined as seeing oneself as good or virtuous (Cohen, Garcia, Apfel & Master, 2006). Further, membership in a group is an important source of self-integrity, leading to an individual’s awareness about negative stereotypes of their group being detrimental to their self-integrity and thus threatening. When members of a group are aware of these negative stereotypes about their group, they will likely worry about confirming these negative characteristics attributed to their group, which imposes a psychological burden or psychological threat. This threat that one is “at risk of confirming, as self-characteristic, a negative stereotype about one’s group” is known as “stereotype threat,” and is relevant to African Americans in the domain of intelligence (Steele & Aronson, 1995, p. 797). African Americans are widely stereotyped to be less intelligent than other racial groups, research indicating that fifty-three percent of White Americans report feeling that African Americans are less intelligent than Whites, and that even more White Americans implicitly hold this view (Aronson, Fried & Good, 2001; Devine, 1989) African Americans are aware of this negative stereotype, and thus experience a psychological threat in situations where intelligence is relevant, which imposes a unique psychological burden (not experienced by Whites) that can undermine their academic performance (Aronson, Fried & Good, 2001; Steele & Aronson, 1995). This psychological burden can result anxiety about confirming this stereotype so severe that it disrupts and hinders

STEREOTYPE THREAT AND THE RACIAL ACHIEVEMENT GAP

the performance of African-Americans in academic settings, and thus accounts in part for the black-white achievement gap.

Stereotype threat is likely a widespread problem on college campuses, as the only necessary conditions for an individual to feel this threat are that he or she is aware of the stereotype and is concerned about disproving the negative characteristic the stereotype implies (Aronson, Fried & Good, 2001; Aronson, Quinn & Spencer, 1998). This study looked at the role of stereotype threat in the black-white achievement gap by examining which factors produce the highest levels of stereotype threat. By understanding which factors lead to the highest levels of stereotype threat, and thus are the most detrimental to academic performance of African Americans, we can better understand how to mitigate these factors and close the black-white achievement gap.

In this study, performance of African American and White American college students on an intelligence test and their subsequent anxiety level will be measured. These variables will be measured following an intelligence test in which the salience of one's racial group membership and the perceived importance of the intelligence test were manipulated. Performance on an intelligence test will be used as the measure of performance as standardized achievement and intelligence tests (e.g. SAT) are an area in which there is a large black-white achievement gap and stereotype threat has been shown to significantly undermine performance on these types of tests (Aronson, Fried & Good, 2001; Steele & Aronson, 1995). Following the intelligence test, participants' self-reported will be measured because past research suggests that stereotype threat operates in part by increasing the anxiety level of African American, which then hinders their performance on intelligence tasks (Aronson, Fried & Good, 2001; Blascovich, Spencer, Quinn & Steele, 2001; Cohen, Garcia, Apfel & Master, 2006). Thus, if stereotype threat is operating,

STEREOTYPE THREAT AND THE RACIAL ACHIEVEMENT GAP

African Americans should experience increased anxiety relative to Whites following the intelligence test.

Past research has suggested that the salience of one's racial group membership and the perceived importance of a test in determining one's intelligence are both important factors in how much stereotype threat an individual experiences. Various studies have found that African Americans experience more stereotype threat, and thus their performance is undermined to a larger degree, when a test is presented as a measure of their intelligence or ability or when their race is emphasized to them before taking the test (Aronson, Fried & Good, 2001; Blascovich, Spencer, Quinn & Steele, 2001; Steele & Aronson, 1995). This study expands on past research of stereotype threat's role in the black-white achievement gap in two important ways. The first is that, by manipulating both the salience of race and the importance of the test as a measure of intelligence, this study can examine possible interactions between these two variables as well as their individual effects. Further, this study manipulates the salience of race in a way that is much more representative of the situation African Americans are actually experiencing. Most studies manipulate the salience of race by manipulating the race of the experimenter or whether or not the participant has to indicate their race before taking an intelligence test (Aronson, Fried & Good, 2001; Huang, 2009). This study will instead manipulate the salience of race by manipulating whether the participant takes the intelligence test with confederates that are African American or White to simulate the classroom experience, and thus the effect the race of classmates might have.

Based on the past research described above, we predict that the salience of race and perceived importance of the test in determining intelligence will each significantly affect the anxiety level and performance on the intelligence test of African American participants only.

STEREOTYPE THREAT AND THE RACIAL ACHIEVEMENT GAP

More specifically, for the dependent variable of performance on the intelligence test, we predict that (a) the performance of African American participants in the high race salience condition will be significantly lower than those in the low salience (control) condition (b) the performance of African American participants in the high perceived importance (of the test in determining intelligence) will be significantly lower than those in the low perceived importance (control) condition (c) the performance of White participants will not be significantly different across the high and low salience conditions (d) the performance of White participants will not be significantly different across the high and low perceived importance condition.

For the dependent variable of self-reported anxiety level, we predict that (a) the anxiety level of African American participants in the high race salience condition will be significantly higher than those in the low salience condition (b) the anxiety level of African American participants in the high perceived importance condition will be significantly higher than those in the low perceived importance condition (c) the anxiety level of White participants will not be significantly different across the high and low salience conditions (d) the performance of White participants will not be significantly different across the high and low perceived importance condition. Finally, we predict that there will be an interaction between (a) race and salience of race (b) race and importance of task (c) race, salience of race, and importance of task.

Method

Participants

Participants in this study will be approximately 120 male and female students of Tulane University. Only the data of White and African American participants will be used, and the study will recruit participants such that there are enough participants of each racial group to analyze their data separately. Participants will likely range from ages 17-22, and will likely be

STEREOTYPE THREAT AND THE RACIAL ACHIEVEMENT GAP

more educated, liberal, and affluent than the general population due to the sample consisting solely of Tulane University students. This sample was chosen for convenience because the research is being conducted at Tulane University, and because the black-white achievement gap is highly present on college campuses.

Procedures

One week before their scheduled lab session, participants will complete an online survey through Qualtrics in order to gather demographic and other relevant information. Participants will answer questions assessing their gender, race, SAT score, and self-reported trait anxiety level (measured by the Trait Anxiety Scale) (Spielberger, 2010).

In each lab session, the participant will complete an online test of intelligence made up of thirty items from the Graduate Record Examination (GRE) followed by a self-reported measure of anxiety determined by the State Anxiety Scale (Spielberger, 2010; Steele & Aronson 1995). The participant completes this test in a room with two confederates posing as other participants. The confederates complete the intelligence test and self-reported anxiety measure along with the participant to simulate a classroom setting in which the participant would likely be taking this sort of intelligence test. Participants in the lab are assigned to one of four conditions, the condition determining the race of the confederates (African American or White), and what the participant is told the purpose of the intelligence test is (high or low importance).

In order to manipulate salience of race, participants were assigned to one of two levels: (a) high salience of race, in which the race of the two confederates is different than the race of the participant (e.g. African American participant, two White confederates) (b) low salience of race, in which the race of the two confederates is the same as the race of the participant (e.g.

STEREOTYPE THREAT AND THE RACIAL ACHIEVEMENT GAP

African American participant, two African American confederates). In order to avoid experimenter effects, the experimenter will be the same race as the participant in all conditions.

In order to manipulate the perceived importance of the task in determining intelligence, participants were assigned to one of two levels: (a) high importance of task, in which the test was described as a measure of intelligence that would be used to assess their intellectual growth since taking the SAT (as reported in the Qualtrics survey). (b) low importance of task, in which the test was described simply as a problem-solving task.

Figure 1.

African American Level

		Salience of Race Level	
		low	high
Importance of Task Level	low		
	high		

White Level

		Salience of Race Level	
		low	high
Importance of Task Level	low		
	high		

When a participant arrives for their lab session, they will be greeted by an experimenter and instructed to sit at the open computer between the two confederates already seated in front of computers. The experimenter will then instruct all three “participants” that they will be participating in two separate studies during their session. The “first study” will be the intelligence test, which the experimenter will describe as either a measure of intelligence or a

STEREOTYPE THREAT AND THE RACIAL ACHIEVEMENT GAP

measure of focus depending on the participant's condition. The intelligence test will be administered on the computer, and after all three "participants" complete the test, the experimenter will move on to the "second study." The second study is truly the self-reported measure of anxiety, which will also be administered on the computer. Participants will then be probed for suspicion of the relation between the two tasks and thoroughly debriefed.

Measures

Salience of Race. This variable is designed to manipulate the extent to which the participant is made aware of their race. Participants are assigned to either the high salience or low salience (control) condition. High salience indicates that participants are made more aware of their race, while low salience indicates that participants' race is not emphasized.

Importance of Task. This variable is designed to manipulate the extent to which the participant believes that the intelligence test is an important indicator of their overall intelligence. Participants are assigned to either the high importance or low importance (control) condition. High importance indicates that the test is presented as a measure of intelligence, while low importance indicates that the test is presented as a measure of focus, and its ability to measure intelligence is not emphasized.

Race. This variable is designed to measure the race a participant identifies with. Response options are dichotomous (as we only accept those identifying as one of these two groups), categorical options of either 0 (White) or 1 (African American). High scores indicate the participant identifies as African American.

Performance on Intelligence Test. This variable is designed to measure the participants' performance on a test made up of 30 items from the GRE, adjusted for individual intelligence

STEREOTYPE THREAT AND THE RACIAL ACHIEVEMENT GAP

differences (determined by SAT score). High scores indicate that the participant performed well on the intelligence test (adjusted for individual ability).

Anxiety Level. This variable is designed to measure the extent to which participants are experiencing a state level of anxiety (i.e. apprehension, nervousness, discomfort) following the completion of the intelligence task using the State Anxiety Scale. Response options are on a 4 point scale ranging from 0 (not at all) to 3 (very often). High scores indicate a high level of state of anxiety following the intelligence task.

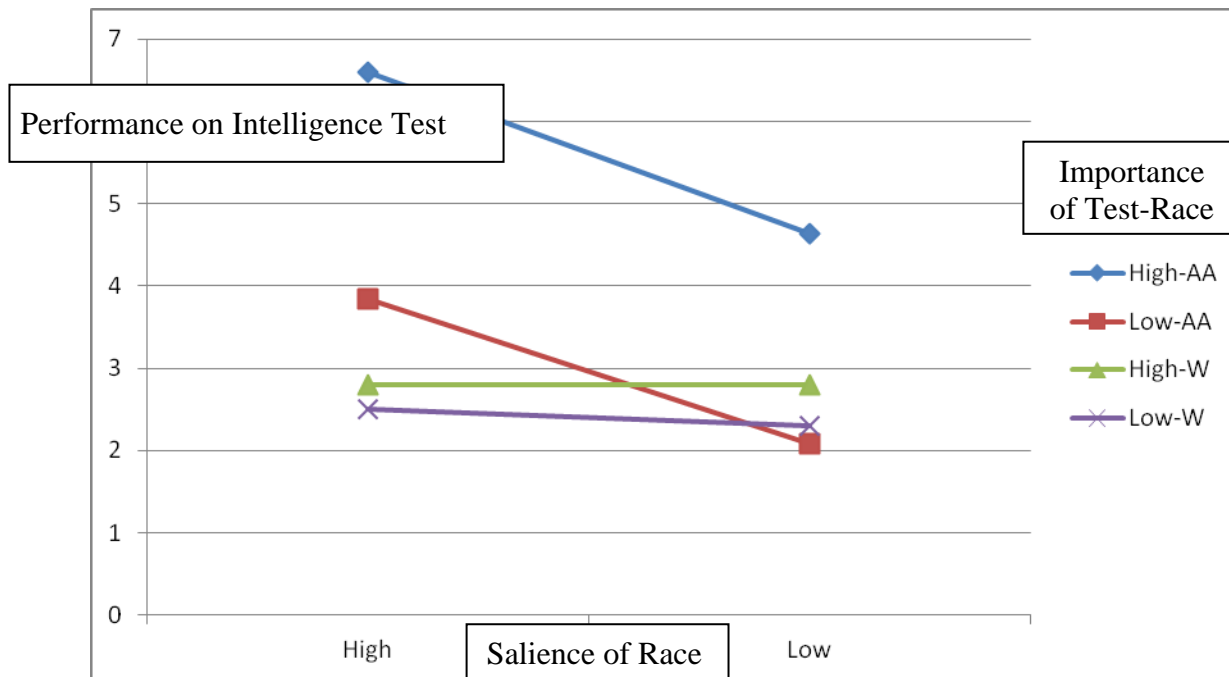
Anticipated Results and Discussion

This study will employ a 2 (Salience of Race: High or Low) x 2 (Importance of Task: High or Low) x 2 (Race: White or African American) P x E factorial between subjects design. The data will be analyzed using a 3-way ANOVA significance test. A Cohen's *d* would also be calculated in order to examine the effect size of group differences in each condition. If the hypotheses of the study hold true, we would expect both a main effect of salience of race and of importance of task for African American participants only (and not White participants). More specifically, African American participants in the high salience level and high importance level would tend to have lower performance and high anxiety levels. And thus, would expect an interaction between race and salience of race, and between race and importance of task. This means that at White level of race, the experimental and control conditions of salience of race and importance of task are not significantly different, but they are at the African American level of race. We would also expect an interaction between race, salience of race, and importance of task, specifically that in the (African American, high salience, high importance) condition, performance on the task would be especially low and anxiety would be especially high.

STEREOTYPE THREAT AND THE RACIAL ACHIEVEMENT GAP

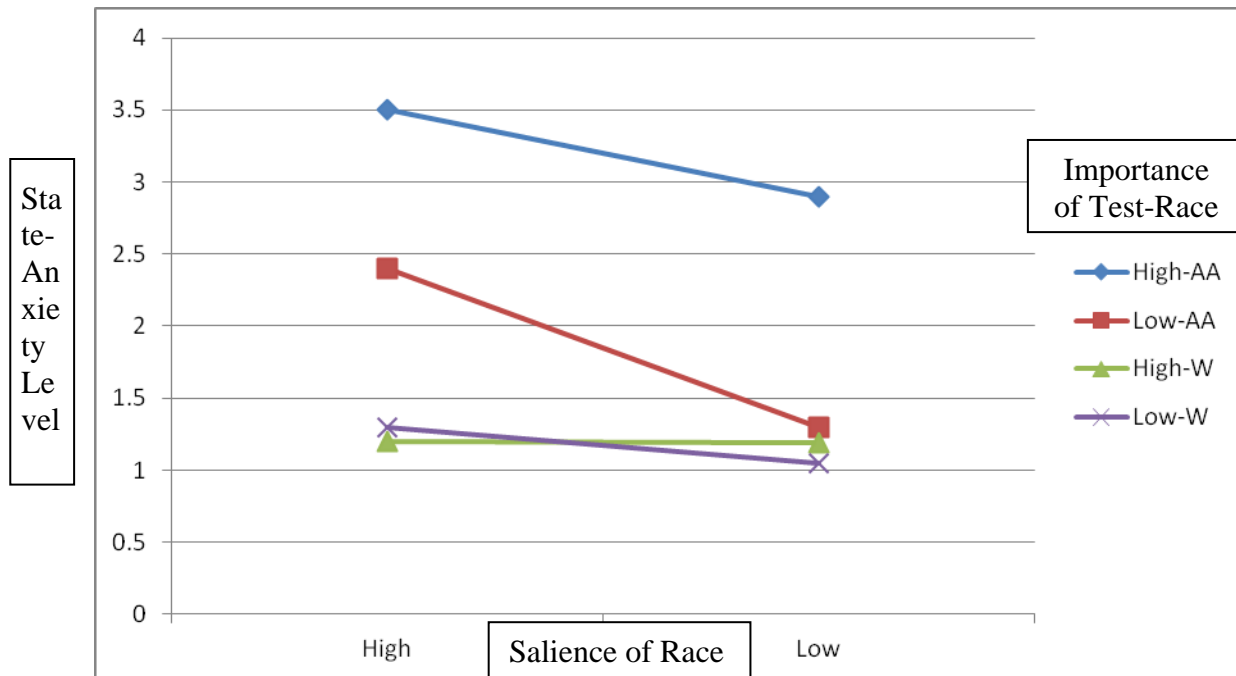
Figure 2.

DV: Performance on Intelligence Test



DV: Anxiety Level

STEREOTYPE THREAT AND THE RACIAL ACHIEVEMENT GAP



If these findings hold true, then this study has made important steps in identifying that factors that contribute to stereotype threat in African Americans. Stereotype threat is thought to be one of the causes of the black-white achievement gap, and thus increased understanding in the variables involved could have widespread implications (Aronson, Fried & Good, 2001). An understanding of stereotype threat of African Americans, and thus of part if the reason for their underperformance (in comparison to their white peers) allows for the creation of effective interventions. If it is true that salience of race and importance of a task in terms measuring intelligence hinder performance on intelligence related tasks for African Americans, then one could create interventions that lessen the salience of race for participants (e.g. remove the boxes on standardized tests that require participants to mark their race) and the emphasis on a measure as being a determinant of their intelligence. If these interventions can lessen the black-white achievement gap, this might be a step toward solving the systematic racial inequality within the United States.

STEREOTYPE THREAT AND THE RACIAL ACHIEVEMENT GAP

If the proposed findings do not hold true, then stereotype threat is likely not what is leading to the black-white achievement gap. Other possible explanations look to differences in genetic and environmental factors that could also lead to this gap. This study would still be useful in that it would provide compelling evidence against stereotype threat as an alternative explanation for these other factors, and thus strengthens another explanation. As the black-white achievement gap is a pervasive and important social problem, these other explanations and possible solutions would need to be thought through carefully.

This study has a few important limitations. The first concern is with internal validity, as both males and females were used in this study. Past research has suggested that women experience stereotype threat in the presence of males (Aronson, Quinn & Spencer, 1998). This suggests that part of the detriment to their performance and increased anxiety women experience in the study could be due to the stereotype threat they are experiencing due to their gender rather than their race. Another limitation of this research regards the ecological validity of the solutions it suggests. It does not seem that interventions that eliminate African Americans' awareness of their race nor that eliminate emphasis on tests as an indicator of intelligence would be possible in a college setting (Steele & Aronson, 1995). Most universities are relatively diverse, and an essential part of exams are the component of evaluation, and thus none of these factors leading to stereotype threat could ever be fully eliminated. A final weakness of the study concerns its external validity, as all participants attend a private university, suggesting that they are more educated, more intelligent, and belong to a higher socio-economic status group than the average person. As these factors are all highly relevant to achievement and performance, there is a concern that these findings would not generalize to different populations (e.g. low income

STEREOTYPE THREAT AND THE RACIAL ACHIEVEMENT GAP

populations, uneducated urban populations) where the black-white achievement gap is arguably an even larger problem.

STEREOTYPE THREAT AND THE RACIAL ACHIEVEMENT GAP

References

- Aronson, J., Fried, C., & Good, C. (2001). Reducing the effects of stereotype threat on African American college students by shaping theories of intelligence. *Journal of Experimental Social Psychology, 38*, 113-125.
- Aronson, J, Quinn, D., & Spencer, S. (1998). *Stereotype threat and the academic underperformance of women and minorities*. New York: Academic Press.
- Blascovich, J., Spencer, S., Quinn, D., & Steele, C. (2001). African Americans and high blood pressure: The role of stereotype threat. *Psychological Science, 12*, 225-229.
- Bowen, W., & Bok, D. (1998). *The shape of the river: Long term consequences of considering race in college and university admissions*. Princeton, NJ: Princeton University Press.
- Cohen, G., Garcia, J., Apfel, N. & Master, A. (2006). Reducing the Racial Achievement Gap: A social-psychological intervention. *Science, 313*, 1307-1310.
- Devine, P. (1989). Stereotypes and prejudice: Their controlled and automatic components. *Journal of Personality and Social Psychology, 56*, 5-18.
- Espenshade, T., & Walton-Radford, A. (2009). *No longer separate, not yet equal: Race and class in elite college admission and campus life*. Princeton, NJ: Princeton University Press.
- Hedges, L., & Nowell, A. (1999). Changes in the black-white gap in achievement test scores: The evidence from nationally representative samples. *Sociology of Education, 72*, 111-135.
- Hershberg, T. (1998). The case for new standards in education, *Education Week, 17*, 1-2.
- Huang, M. (2009). Race of the interviewer and the black-white test score gap. *Science, 38*(1), 29-38.

STEREOTYPE THREAT AND THE RACIAL ACHIEVEMENT GAP

Jencks, C., & Phillips, M. (1998). *The black-white test score gap: An introduction*. Washington DC: Brookings Institute.

Owens, J., & Massey, D. (2011). Stereotype threat and college academic performance: A latent variables approach. *Social Science Research, 40*(1), 150-166.

Sherman, D., & Cohen, G. (2006). The psychology of self-defense: Self-affirmation theory. *Advances in experimental and social psychology, 38*, 183-242.

Spielberger, C. (2010). State-Trait Anxiety Inventory. *The Corsini Encyclopedia of Psychology*. John Wiley and Sons, Inc.

Steele, C., & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African-Americans. *Journal of Personality and Social Psychology, 68*, 797-811.