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AT LAUREL SCHOOL

STEREOTYPE THREAT

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by Lisa Damour, Ph.D.

SHIELDING GIRLS FROM **STEREOTYPE THREAT**

The term *stereotype threat* describes the condition of being at risk of confirming a negative stereotype about a group to which one belongs. This phenomenon was recognized by psychologists who demonstrated that the **mere existence of a negative stereotype can suppress the academic performance** of members of the negatively stereotyped group.¹

Researchers have since found that **stereotype threat can suppress the performance of women taking mathematics tests** due to widely-held, inaccurate beliefs that women are not as capable as men in mathematics.² In light of the far-reaching implications of stereotype threat for numerous negatively-stereotyped groups, **over 300 experiments on the causes, consequences, and moderators of stereotype threat have been published in the academic literature** since 1995.

[SHIELDING GIRLS FROM STEREOTYPE THREAT]

THE DISCOVERY OF STEREOTYPE THREAT

In the first study of stereotype threat, college students in groups made up of African-American and white research participants were asked to complete difficult problems from the Graduate Record Exam. Participants in the first group were told that they were being tested on their “reading and verbal abilities” while participants in the second group were told that the researchers were investigating the “psychological factors involved in solving verbal problems.”³ In other words, the participants in the first group were given a prompt

designed to stimulate the negative stereotype that African-American students are less intelligent than white students, while the participants in the second group were given a prompt completely unrelated to the negative stereotype about intelligence. The researchers found that, when controlling for ability by taking the students’ SAT scores into account, the African-American students in the first group significantly underperformed relative to the white students, while the African-American students in the second group had the same scores as the white students. Their results clearly indicated the power of a negative stereotype to suppress performance.

Girls who care deeply about math and doing well on math tests are more likely to be affected by stereotype threat.

THE CONDITIONS THAT CREATE STEREOTYPE THREAT

Given that negative stereotypes exist for members of every social, racial, ethnic, religious, and/or gender group, stereotypes can threaten anyone. Yet not every member of a negatively stereotyped group is equally affected by stereotype threat. Both individual and situational factors have been found to increase the likelihood that a person will underperform when faced with the risk of confirming a negative stereotype.

- * Individuals who are strongly invested in the domain in which they are being evaluated are more likely to suffer the effects of stereotype threat. In other words, girls who care deeply about math and doing well on math tests are more likely to be affected by stereotype threat than girls who have no particular investment in the subject.⁴
- * Individuals who are strongly committed to their group identity are more likely to suffer from the effects of stereotype threat; girls who are highly identified with their gender identity, or minority students with strong racial or ethnic identifications are more likely to have their performance undermined by stereotype threat.⁵
- * Stereotype threat is most robust in situations that include a variable that “triggers” the stereotype.
 - One study found that women underperformed on analytical test questions from the Graduate Record Exam when they were led to believe that the experimenter administering the exam was sexist.⁶
 - Other studies have found that women are more likely to underperform on math tests when testing alongside men; as the number of men in the room increased, so did the female underperformance.⁷
 - Remarkably, stereotypes can be activated by a factor as subtle as a demographic question about one’s gender or race. DanaHER and Crandall determined that 4700 more girls a year would receive AP calculus credit if the question that asks about the student’s gender were moved to the back of the test.⁸
- * Tests that are explicitly framed as ability tests, or difficult tests, are most likely to heighten stereotype threat.⁹ In other words, tests typically credited with providing a “pure” measure of ability, such as the SAT, are likely to heighten the effects of stereotype threat. Further, a test must be sufficiently difficult to raise the specter of stereotype threat because individuals do not worry about confirming or disconfirming negative stereotypes when faced with easy questions. Stereotype threat only becomes a factor when people are asked to test the limits of their abilities.¹⁰

Taken together, these factors point to the reality that high-stakes testing, such as the SAT or ACT examinations, create a “perfect stereotype threat storm” for highly motivated female math students, especially students from all-girls schools who may feel particularly identified with their female status. Typically, the SAT and ACT are taken alongside male students, ask for demographic information at the beginning of the test, are believed by students to be truly diagnostic of math ability, and ask most students to work at the outer limits of their abilities.

HOW STEREOTYPE THREAT SUPPRESSES PERFORMANCE

Investigations find that individuals experiencing stereotype threat suffer from emotional, physiological, and cognitive interferences with their ability to perform at optimal levels. Stereotype threat has been found to increase anxiety,¹¹ heart rate variability,¹² and blood pressure.¹³ With regard to cognitive functioning, stereotype threat reduces working memory (the ability to hold in mind and manipulate information),¹⁴ lowers performance expectations,¹⁵ and causes some people to reduce their effort¹⁶ while causing others to unhelpfully increase their effort (e.g., spending too much time on questions, revisiting and changing test answers).¹⁷ In other words, people who are experiencing stereotype threat are likely to experience heightened anxiety. However, being unaware of the phenomenon of stereotype threat, they attribute their anxiety to personal or situational factors (e.g., "This test is too hard for me." or "I must not have studied enough.") which only raise their anxiety levels and contribute to "going blank" or panicking while taking a test.

REDUCING THE NEGATIVE EFFECTS OF STEREOTYPE THREAT

Interventions that teach students about the phenomenon of stereotype threat have been found to reduce its impact on stereotyped groups.¹⁸ The effects of stereotype threat can also be reduced by providing students with situational (as opposed to stereotype-based) explanations for anxiety experienced in evaluative situations.¹⁹ Providing students with alternate, positive stereotypes effectively offsets the negative effects of stereotype threat²⁰ while an emphasis on high standards and reassurance that the student is capable of meeting the standards insulates students from the effects of stereotype threat.²¹

Studies focusing specifically on female math students have found that self-affirmation – the act of reflecting on a valued, personal attribute – effectively shields students from stereotype threat when taking math tests.²² Teaching female math students about women who have achieved high levels of success in math has also been found to reduce the effects of stereotype threat.²³ Not surprisingly, efforts to limit or eliminate variables that are likely to "trigger" negative stereotypes during test-taking situations are also an important part of shielding students from stereotype threat.²⁴

SHIELDING GIRLS FROM STEREOTYPE THREAT [ENDNOTES]

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- 18 Johns, M., Schmader, T., & Martens, A. (2005). Knowing is half the battle: teaching stereotype threat as a means of improving women's math performance. *Psychological Science*, 16(3), 175-179.
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RESOURCES FOR TEACHERS



ONLINE RESOURCES

THIN ICE: STEREOTYPE THREAT AND BLACK COLLEGE STUDENTS

Written by Claude Steele, a pioneer in the research on stereotype threat, this article provides an engaging and accessible introduction to the research that discovered stereotype threat.

www.theatlantic.com/doc/199908/student-stereotype

REDUCINGSTEREOTYPEPETHREAT.ORG

Valuable information and resources can be found at www.reducingstereotypethreat.org, an excellent website that maintains an updated synopsis of the research on stereotype threat.



DOWNLOADABLE POWERPOINT

TEACH STUDENTS ABOUT STEREOTYPE THREAT

Teach students about stereotype threat and how to minimize its effects on their performance with this engaging PowerPoint presentation developed by the Center for Research on Girls (CRG). Activity handouts to accompany this PowerPoint presentation are also available.

<http://www.laurelschool.org/about/CRGResourceCenter.cfm>



DOWNLOADABLE DOCUMENTS

SHIELDING STUDENTS FROM STEREOTYPE THREAT: A GUIDE FOR TEACHERS

This guide, developed by CRG, summarizes the research on how teachers can shield their students from stereotype threat. While the content in the guide emphasizes the role of math teachers of female students, the information provided can and should be adapted by anyone who teaches members of negatively stereotyped groups.

<http://www.laurelschool.org/about/CRGResourceCenter.cfm>

PERSONAL STEREOTYPE THREAT ASSESSMENT FOR STUDENTS

After learning about the phenomenon of stereotype threat, students should reflect on the specific ways in which they are affected by stereotype threat. This document, developed by CRG, includes instructions for introducing a personal stereotype threat assessment to students as well as a student handout.

<http://www.laurelschool.org/about/CRGResourceCenter.cfm>

