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Closing the Racial Achievement Gap

Welcome to the fifth installment of

Mind Matters

Sciam.com's "seminar blog" on the sciences of mind and brain. Each week, top researchers describe their disciplines' most significant new findings -- and what they, as fellow researchers, find most exciting, maddening, significant, odd, or otherwise noteworthy in the research driving their fields. Blog visitors can participate. We hope you'll join us.

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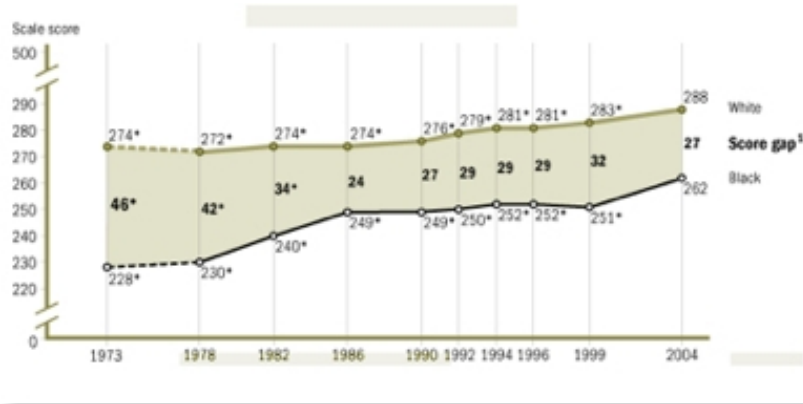
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[Reducing the Racial Achievement Gap: A Social-Psychological Intervention](#)

by [Geoffrey L. Cohen](#), Julio Garcia, Nancy Apfel and Allison Master

Science, 1 September 2006



The racial achievement gap, as seen in math scores of eighth-graders in New York State from 1973 to 2004. In the study reviewed below, a 15-minute essay assignment wiped out 40 percent of the gap in the grades of two groups of high school students.

Introduction

by [David Dobbs](#), Editor, Mind Matters

For as long as educators in the United States have been collecting standardized test scores, African American and Latino students' scores have lagged those of white students and Asian American students. Asking why this gap exists is a good way to provoke a heated discussion. Asking how to erase the gap is a good way to provoke a pained sense of

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frustration. For while the gap closed nationally between the early 1970s and the early 1990s, it has remained stubbornly fixed since then.

In the paper described below, however, researchers discovered that a single, 15-minute intervention erased almost half the racial achievement gap between African American and white students. Can it be that easy? As research psychologist Sian Beilock describes below, the startling success of this intervention suggests that if we can better understand the cognitive mechanisms underlying this achievement gap, closing it may get a lot easier.

Closing the Racial Achievement Gap

by [Sian Beilock](#)

There is a [gap in racial achievement](#) in academically based settings in the United States. To put it simply, minority groups such as African Americans on average perform at a lower level than do their majority group counterparts (for example., Caucasian students) in academic situations ranging from the classroom to college admissions tests. This news in itself is perhaps not surprising. The results of a recent research study designed to address the major social concern surrounding this racial achievement gap, however, are.

A 15-minute Solution?

In "[Reducing the Racial Achievement Gap](#)," the paper under review here, [University of Colorado psychologist Geoffrey Cohen](#) and colleagues describe two experiments in which they employed a social-psychological intervention designed to improve minority student performance in the classroom. The intervention was simple, fast and required few resources.

Cohen and his research team targeted seventh-graders from middle-class to lower-middle class families at a suburban northeastern middle school. The student body was divided roughly equally between African Americans and European Americans. Early in the fall term, teachers were asked to administer an "exercise packet" to African American and

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Caucasian seventh graders who had been randomly assigned (within each racial group) to either a treatment or control condition. Importantly, the teachers did not know the purpose of the study nor did they know which students had been assigned to which condition. The packet presented a list of values (for instance, maintaining relationships with friends or family, working to be good at art, cultivating athletic ability). Students in the treatment condition were asked to indicate the value most important to them and write a brief paragraph explaining why they considered the value important. Students in the control condition were asked to indicate their least important value from the list and write a paragraph about why this value might be important to someone else. Once students had finished writing, they placed their packet in an envelope, sealed it, and returned it to their teacher. The teacher then resumed his/her lesson. The entire procedure took approximately 15 minutes.

At the end of the fall term, Cohen and his colleagues were given access to the official transcripts of the students who were assigned to the treatment and control conditions. Not surprisingly, African American students performed worse than their Caucasian counterparts overall -- the racial achievement gap. However, African American students in the treatment condition (that is, those who wrote about their most important values) performed better than those in the control condition by about one quarter of a grade point in both the course in which they had initially completed their packets and in their overall grades for other courses that semester. This improvement was not limited to a few students -- the treatment benefited about 70 percent of the African American students in the treatment group.

Among the Caucasian studies, meanwhile, there was no difference in performance between the treatment and control groups. Given that the average difference between African Americans in the control condition and Caucasians overall was about 70 percent of a grade point, and the African Americans in the treatment group improved by roughly 25 percent of a grade point, this represents about a 40 percent reduction in the racial achievement gap.

Was this result a fluke? To answer to this question Cohen and his colleagues ran the same study a year later with different students. They got the same results. The likelihood of observing the treatment effects -- twice -- by chance is about 1 in 5,000.

Threatening the Stereotype Threat

So why did this simple 15-minute have such a big effect? The answer may lie in a phenomenon psychologist [Claude Steele](#) has termed [stereotype threat](#). Theories of stereotype threat suggest that awareness of a negative stereotype about a social group in a particular domain can degrade task performance exhibited by group members. Other studies have shown that when the relevant negative group stereotypes are activated in performance situations, African Americans perform poorly on cognitive tasks reputed to assess intelligence, and women perform at a less-than-optimal level on math problems for which they have been told gender differences exist.

It seems a small stretch, then, that minority students who are aware of negative stereotypes impugning the intelligence of their group might constantly walk around in school settings with the weight of such knowledge on their shoulders. And, if such knowledge prevents these students from devoting attention and effort to their school subjects, performance may suffer.

Cohen's work suggests that one way to reverse this type of threat is to allow students to reaffirm their self-integrity. Having African American students write about qualities that are important to them, which presumably enhances their sense of self-worth and value, appears to buffer minority students against threat and its consequences.

Worry Your Working Memory Away

But how exactly does this work?

Although Cohen's work can't answer this question directly, [work in my laboratory](#) at The University of Chicago may offer potential insight. My colleagues and I recently explored how women's math achievement changes in response to being confronted with the widely held stereotype that females are inferior to males in math-based subjects. Women made aware of this gender stereotype (women under stereotype threat) demonstrate worse performance than women who were not made aware of this gender stereotype.

Moreover, women under threat also report worrying about the situation and its consequences (for example, "I thought about how boys are usually better than girls at math so I was trying harder not to make mistakes... even though I did"). These worries are significant, for they impact the transient memory store (or working memory) we normally rely on to solve complex problems. And indeed, women under threat in our study performed poorest on math problems that involved difficult subtraction and division procedures -- problems that make heavy demands on working memory (and especially the verbal component of working memory that worries also likely impact). Math problems that did not have an impact on working memory did not suffer under threat. It may be that writing about one's positive values deflects worries about the negative and promotes engagement with the task. And although the writing assignment used by Cohen only happened once, it is not hard to imagine how a recursive cycle could occur -- the students do better academically, which reduces the power of the stereotype threat, which reduces worry and raises performance, and so on. A negative cycle is reversed and turned positive.

Whatever the cause of the raised performance Cohen's study found, it bears an implication that is hard to refute: the racial achievement gap need not be intractable -- and it does not take millions of dollars or hundreds of worker hours to begin to change it. You can start by simply setting aside a few minutes students to reflect on their positive qualities.



[Sian Beilock](#) is director of the Human Performance Lab at the University of Chicago, which investigates how high-pressure or high-stakes situations affect the attentional processes and memory structures that support skilled performance. Her paper, "Stereotype

threat and working memory: Mechanisms, alleviation, and spill over,"

written with R. J. Rydell and A.R. McConnell, will be published in

[Journal of Experimental Psychology](#) in March.

Posted by [David Dobbs](#) · [21 comments](#) 

COMMENTS

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Alessandro Drudi [Visitor] February 20, 2007 @ 1:57 pm writes:

Caucasian are consistently prevented from feeling proud of being such. Exactly the opposite is valid for Afro-Americans. This obviously reduces self-esteem for the first group, and does the opposite for the second. Could this adversely affect the ability of white students to express their full potential? Shouldn't Human Performance science focus on increasing performance for EVERY single individual? In which sense uniformity is a positive value in itself?

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Katherine [Visitor] February 20, 2007 @ 7:36 pm writes:

"Caucasian are consistently prevented from feeling proud of being such. Exactly the opposite is valid for Afro-Americans. This obviously reduces self-esteem for the first group, and does the opposite for the second. Could this adversely affect the ability of white students to express their full potential?"

Huh? I believe the opposite is true. Society constantly tells white people they are superior, and tells black people they are not as good intellectually. White people dominate all aspects of society including powerful professions and politics, whereas blacks dominate athletics and rap (at least according to how society frames things). Which race would you be more proud to be a member of, given this picture?

True, on an individual basis, most caucasians don't think of their whiteness as a defining part of their identity, or something they're proud to be, whereas the opposite may be true of blacks. But this is a reflection upon society's white-central focus as well. If being white is being "normal" (which is how most whites think of the situation), then why should you be especially proud to assert that identity? Members of targeted groups (minorities, females, etc) must assert pride in their identities in order to fight against discrimination.

In the study they had whites and blacks participate in the self esteem exercise. The white scores didn't go down as a result. They just didn't improve as much as the black scores did. So I don't see how this helps the blacks and hurts the whites. Hopefully people can realize this result is evidence of stereotype threat as pervasive; if whites don't benefit as much from this type of activity, it probably means that they are constantly being more positively reinforced than blacks are, just in general (or blacks are