

INNOCULATING AGAINST STEREOTYPE THREAT

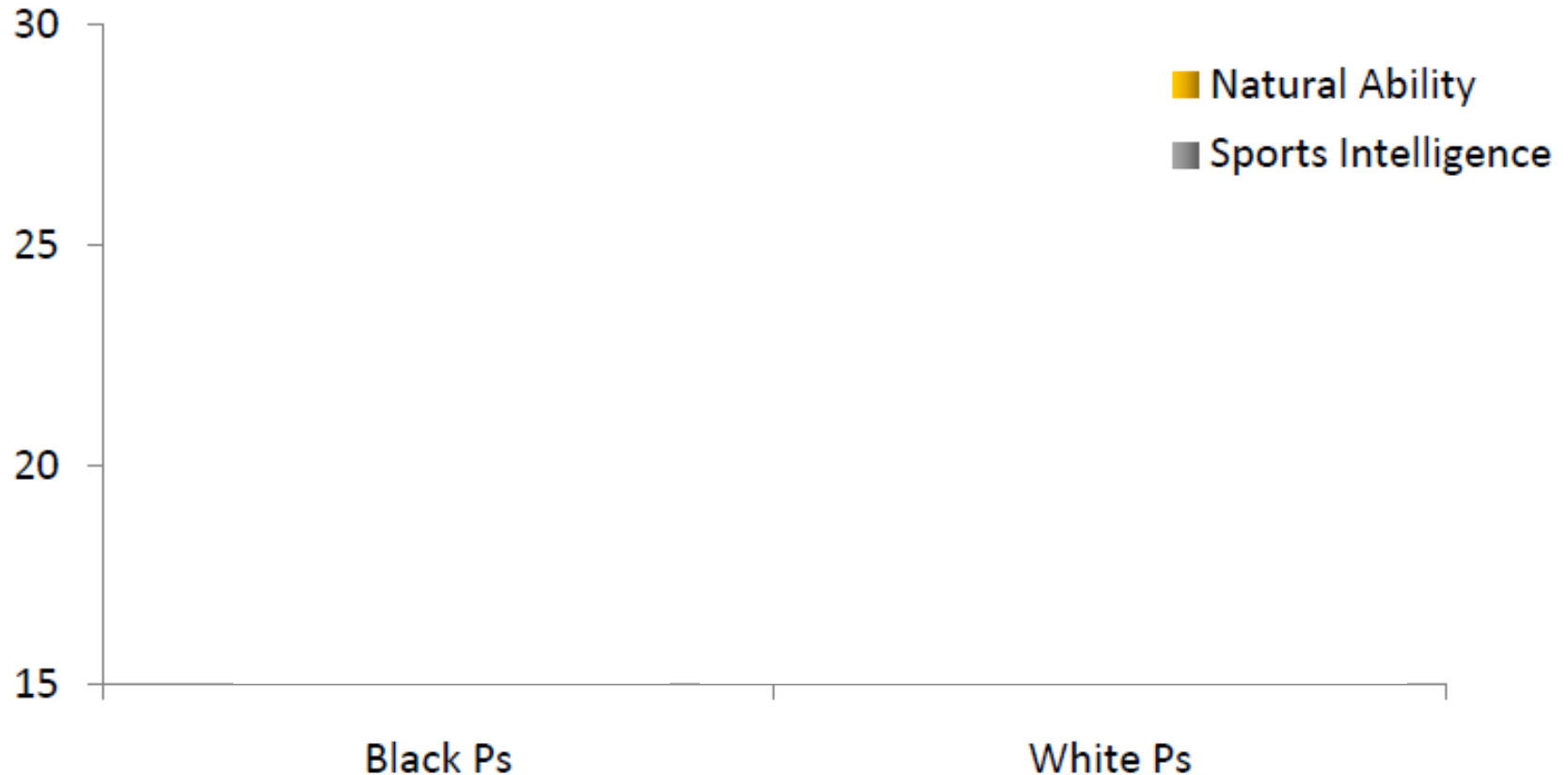


“WHITE MEN CAN’T JUMP”

- Black and White male Ps played golf
- Condition 1: “this game is diagnostic of natural athletic ability”
- Condition 2: “this game is diagnostic of sports intelligence”
- Outcome measure = number of strokes required to complete the 10-hole golf course

NUMBER OF STROKES

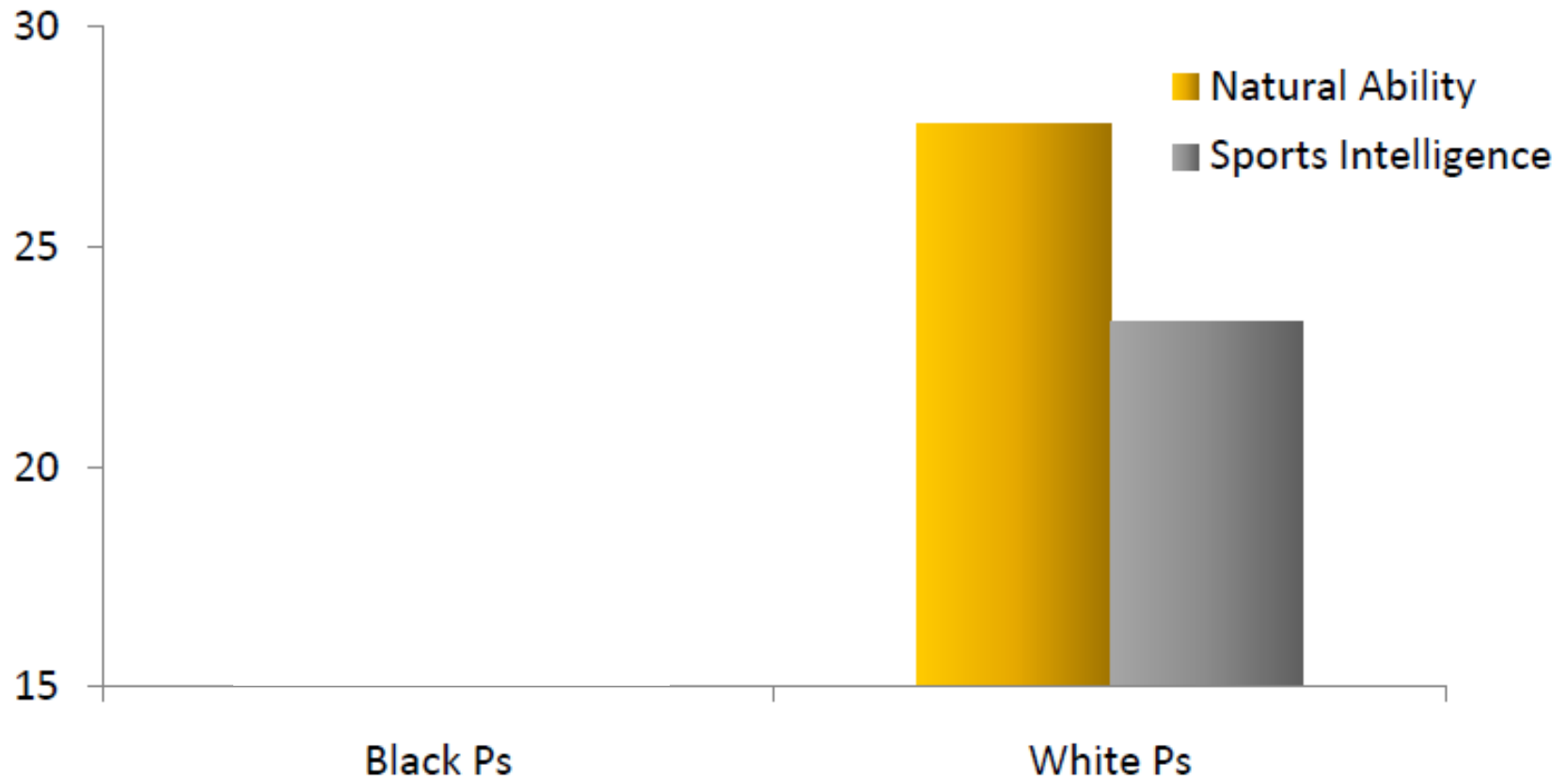
HIGHER NUMBERS = WORSE PERFORMANCE



Stone et al., 1999

NUMBER OF STROKES

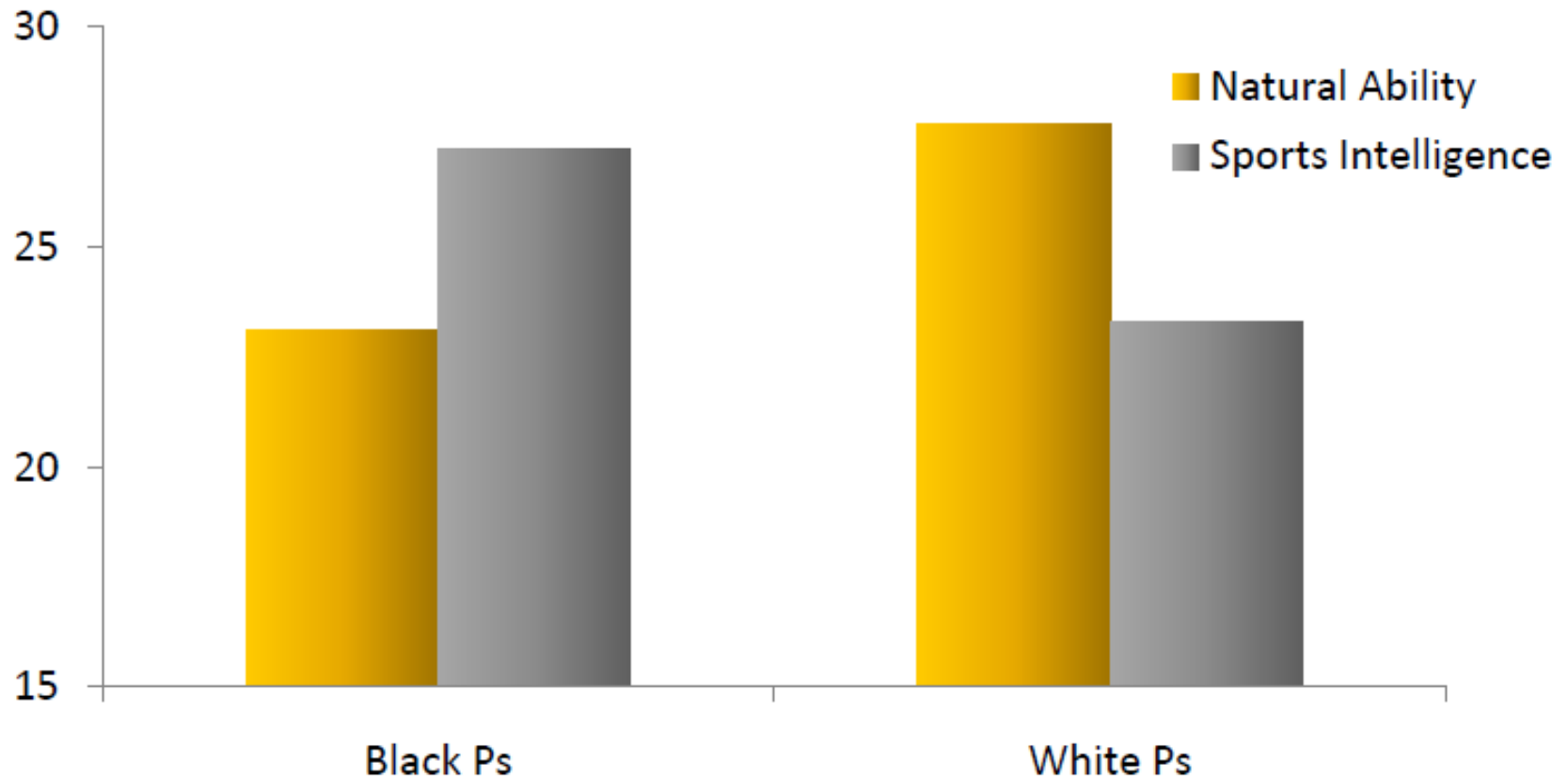
HIGHER NUMBERS = WORSE PERFORMANCE



Stone et al., 1999

NUMBER OF STROKES

HIGHER NUMBERS = WORSE PERFORMANCE





STEREOTYPE THREAT

Anxiety due to a situation in which a negative stereotype about your group could apply

STEREOTYPE THREAT

- Stereotype exists
- Person identifies with group and domain
- Test/task is difficult

STEREOTYPE THREAT

- Stereotype exists

“women are bad at computer science”

- Person identifies with group and domain

“I am a woman—I am a computer scientist”

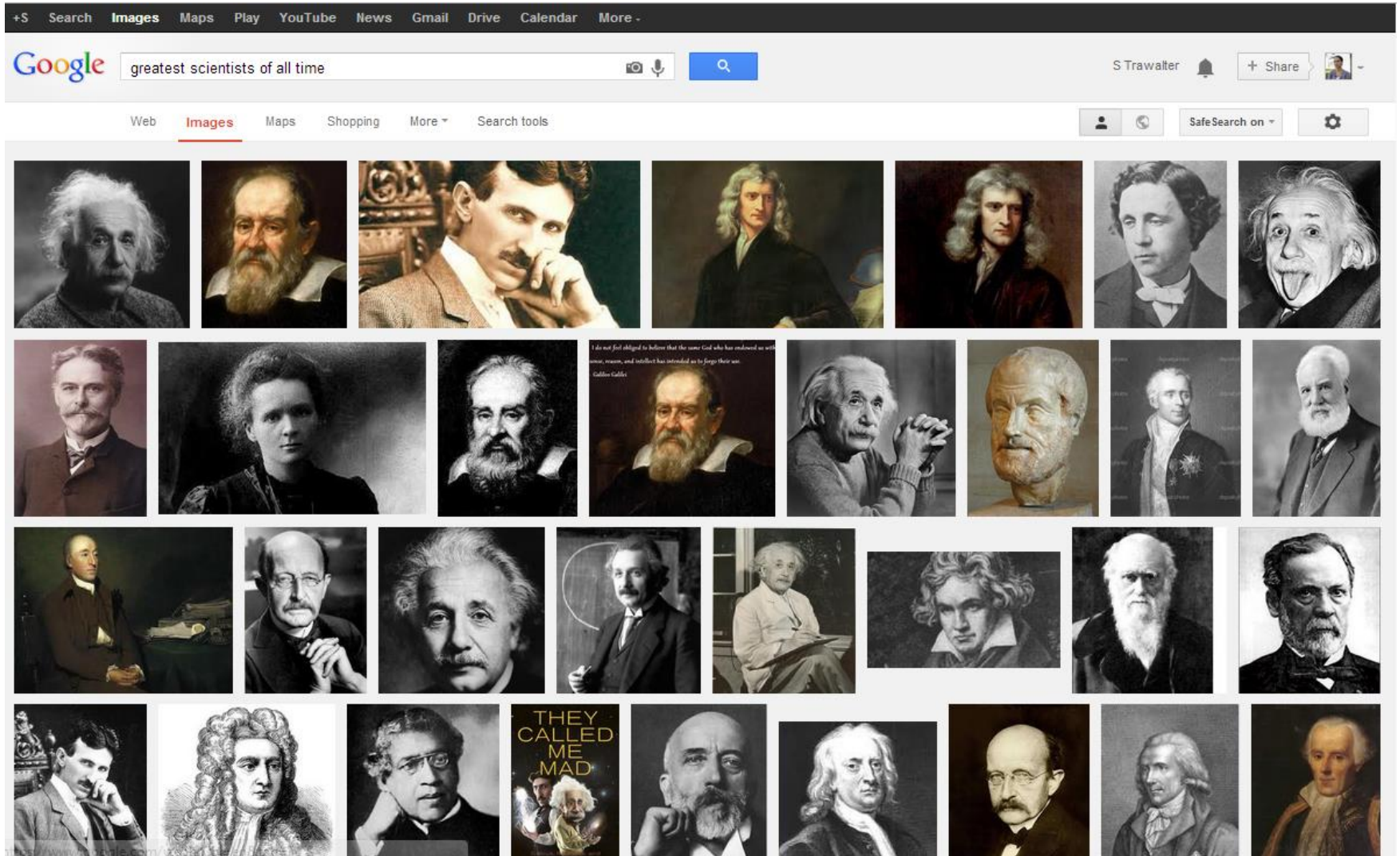
- Test/task is difficult

“Computer science is difficult”

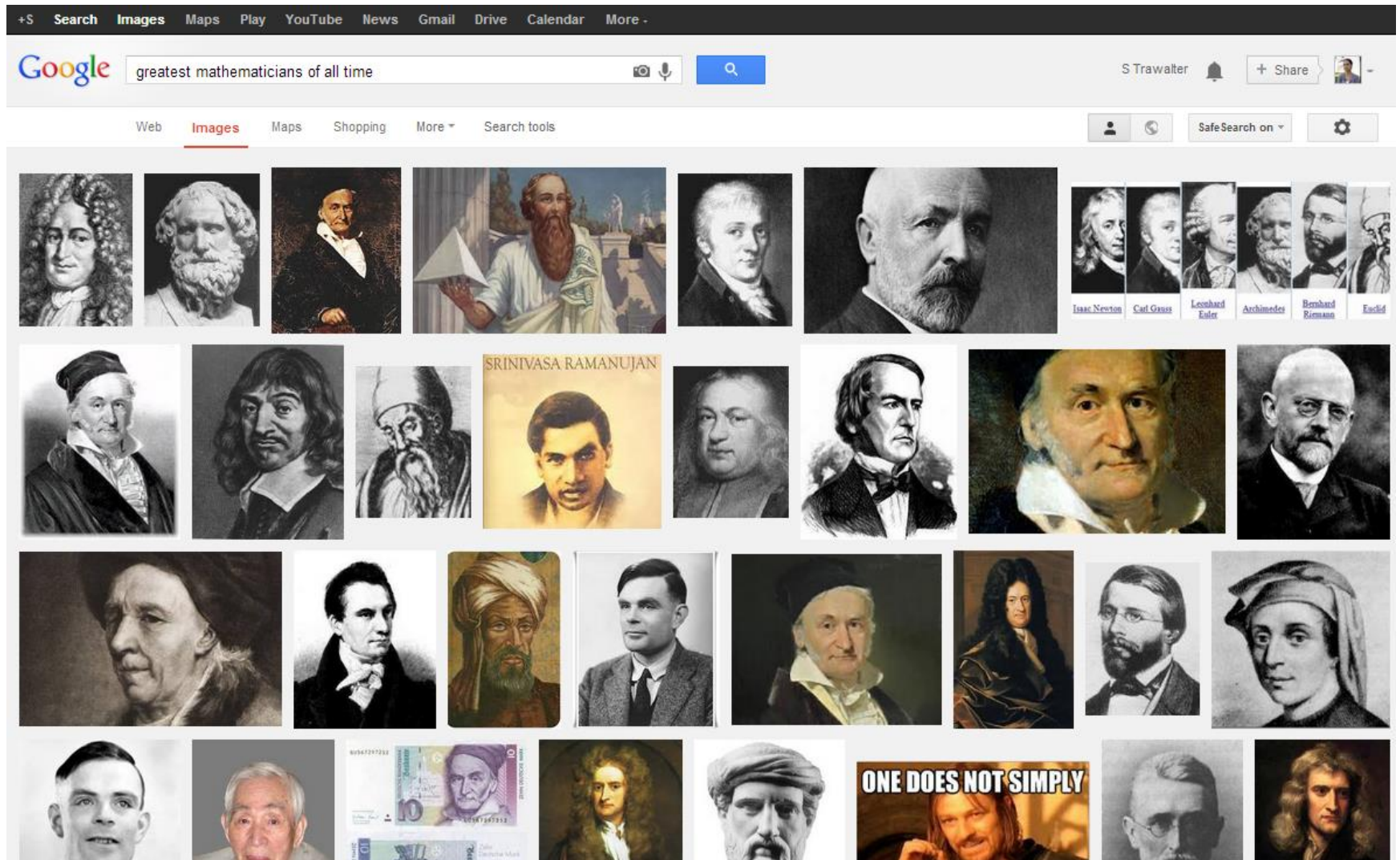
DECREASING STEREOTYPE THREAT

- Change the stereotype
- Secure identification with group and domain
- Make difficult test challenging, not threatening

SOLUTION 1: CHANGE THE STEREOTYPE



SOLUTION 1: CHANGE THE STEREOTYPE



SOLUTION 1: CHANGE THE STEREOTYPE



REPRESENTATION

Research Article

Signaling Threat

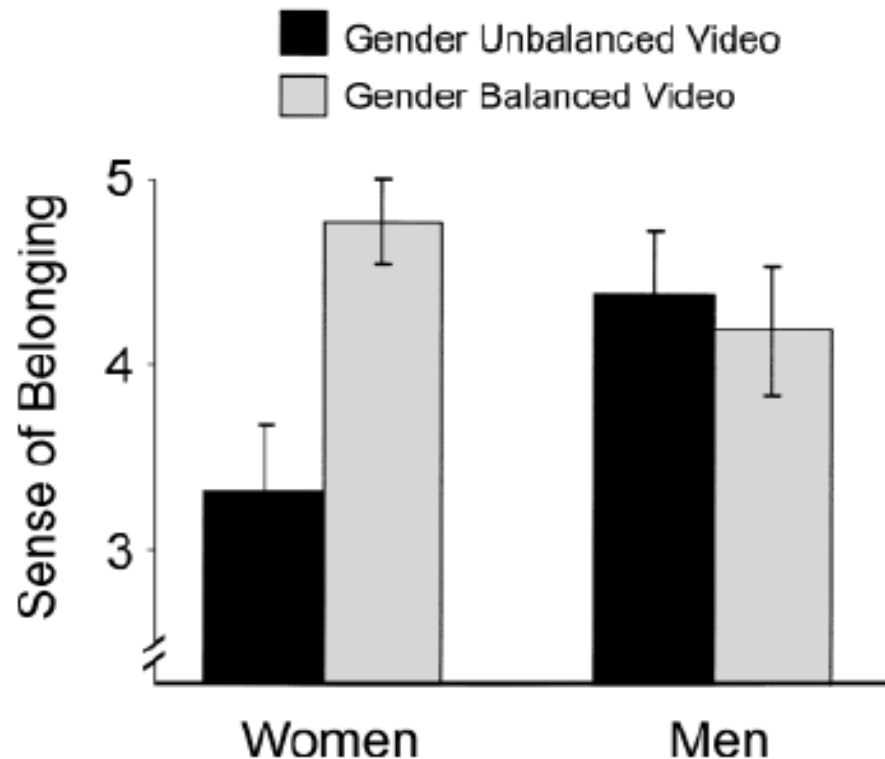
How Situational Cues Affect Women in Math, Science, and Engineering Settings



Research Article

Signaling Threat

How Situational Cues Affect Women in Math, Science, and Engineering Settings



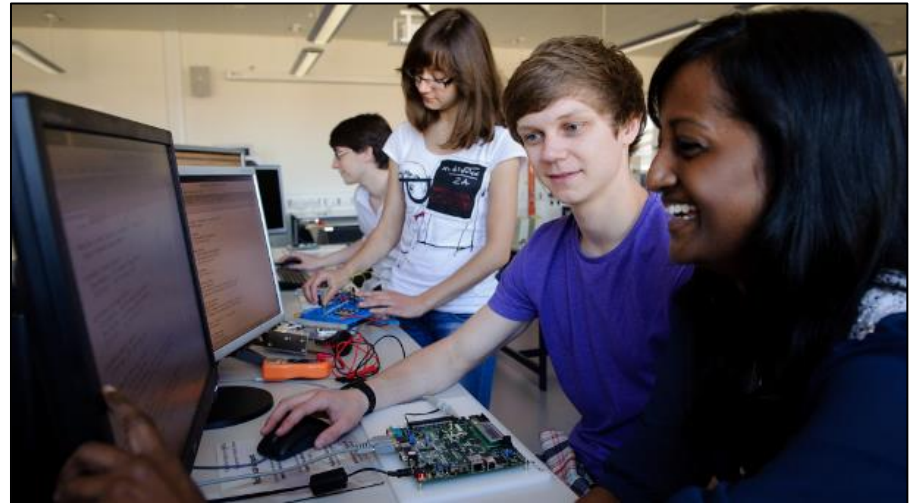
Do High-Achieving Female Students Underperform in Private? The Implications of Threatening Environments on Intellectual Processing

Michael Inzlicht
New York University

Talia Ben-Zeev
San Francisco State University

Stereotype threat research has demonstrated that stereotypes can harm student performance in the face of public evaluation by peers or an experimenter. The current study examined whether stereotypes can also threaten in private settings. Female students completed a math test in 3-person groups, which consisted of either 2 other women (same gender) or 2 men (minority). In addition, students either believed their performance would be broadcasted to their peers (public) or not (private). Results revealed that minority students performed worse than same-gender students in both public and private environments. This finding supports the concept of threatening intellectual environments and shows how far reaching the effects of stereotypes can be. The authors discuss these findings in relation to research on tokenism and to stereotype threat and its educational implications.

GOAL CONGRUITY

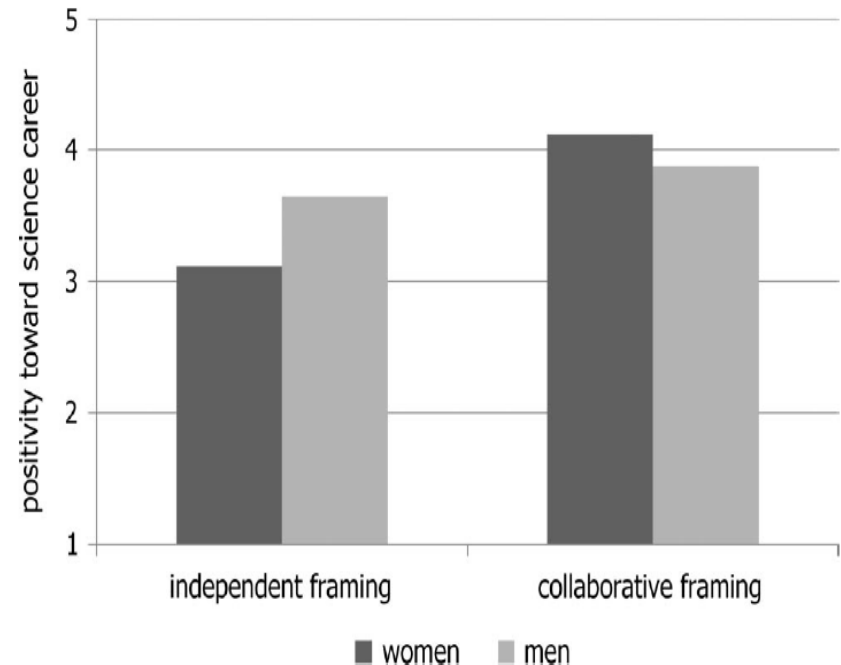


Why do students love computer science? What goals does computer science fulfill?

Malleability in Communal Goals and Beliefs Influences Attraction to STEM Careers: Evidence for a Goal Congruity Perspective

Collaborative framing: “Mentor new members of my statistics group in doing data analysis (e.g., powder X-ray diffraction, differential scanning calorimetry, thermal gravimetric analysis).”

Independent framing: “Do data analysis (e.g., powder X-ray diffraction, differential scanning calorimetry, thermal gravimetric analysis) and troubleshoot any problems that come up by myself.”





PHYSICAL CUES

Journal of Personality and Social Psychology
2009, Vol. 97, No. 6, 1045–1060

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0022-3514/09/\$12.00 DOI: 10.1037/a0016239

Ambient Belonging: How Stereotypical Cues Impact Gender Participation in Computer Science

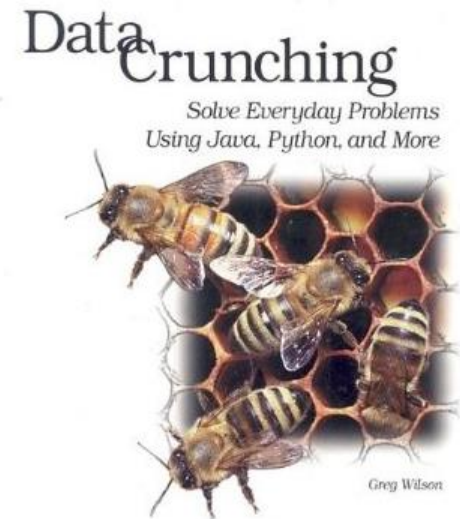
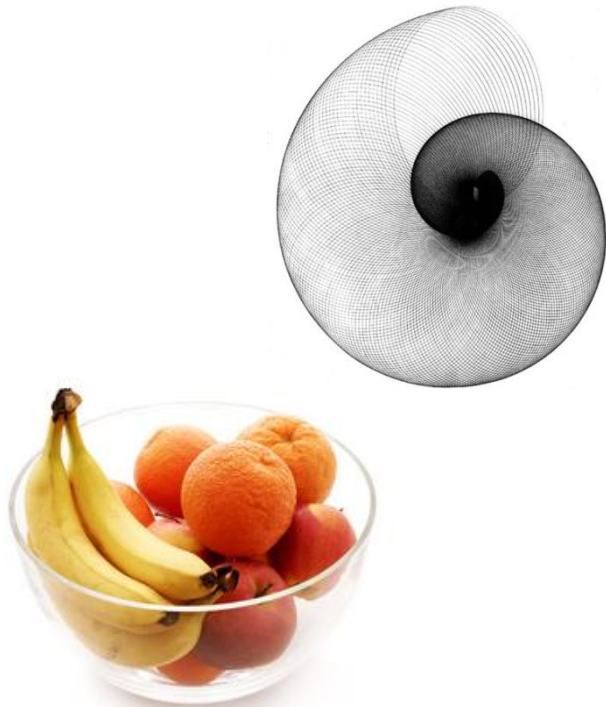


PHYSICAL CUES

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Ambient Belonging: How Stereotypical Cues Impact Gender Participation in Computer Science



UW Computer Science and Engineering



SOLUTION 2: SECURE IDENTIFICATION WITH THE DOMAIN



SOCIAL RELATIONSHIPS

Journal of Personality and Social Psychology
2007, Vol. 92, No. 1, 82–96

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0022-3514/07/\$12.00 DOI: 10.1037/0022-3514.92.1.82

A Question of Belonging: Race, Social Fit, and Achievement

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Geoffrey L. Cohen
University of Colorado at Boulder

Stigmatization can give rise to *belonging uncertainty*. In this state, people are sensitive to information diagnostic of the quality of their social connections. Two experiments tested how belonging uncertainty undermines the motivation and achievement of people whose group is negatively characterized in academic settings. In Experiment 1, students were led to believe that they might have few friends in an intellectual domain. Whereas White students were unaffected, Black students (stigmatized in academics) displayed a drop in their sense of belonging and potential. In Experiment 2, an intervention that mitigated doubts about social belonging in college raised the academic achievement (e.g., college grades) of Black students but not of White students. Implications for theories of achievement motivation and intervention are discussed.

Keywords: attributional retraining, academic achievement, social identity, stereotype threat, stigma or race

ROLE MODELS

STEMing the Tide: Using Ingroup Experts to Inoculate Women's Self-Concept in Science, Technology, Engineering, and Mathematics (STEM)

Jane G. Stout, Nilanjana Dasgupta, Matthew Hunsinger, and Melissa A. McManus
University of Massachusetts, Amherst

Three studies tested a stereotype inoculation model, which proposed that contact with same-sex experts (advanced peers, professionals, professors) in academic environments involving science, technology, engineering, and mathematics (STEM) enhances women's self-concept in STEM, attitudes toward STEM, and motivation to pursue STEM careers. Two cross-sectional controlled experiments and 1 longitudinal naturalistic study in a calculus class revealed that exposure to female STEM experts promoted positive implicit attitudes and stronger implicit identification with STEM (Studies 1–3), greater self-efficacy in STEM (Study 3), and more effort on STEM tests (Study 1). Studies 2 and 3 suggested that the benefit of seeing same-sex experts is driven by greater subjective identification and connectedness with these individuals, which in turn predicts enhanced self-efficacy, domain identification, and commitment to pursue STEM careers. Importantly, women's own self-concept benefited from contact with female experts even though negative stereotypes about their gender and STEM remained active.

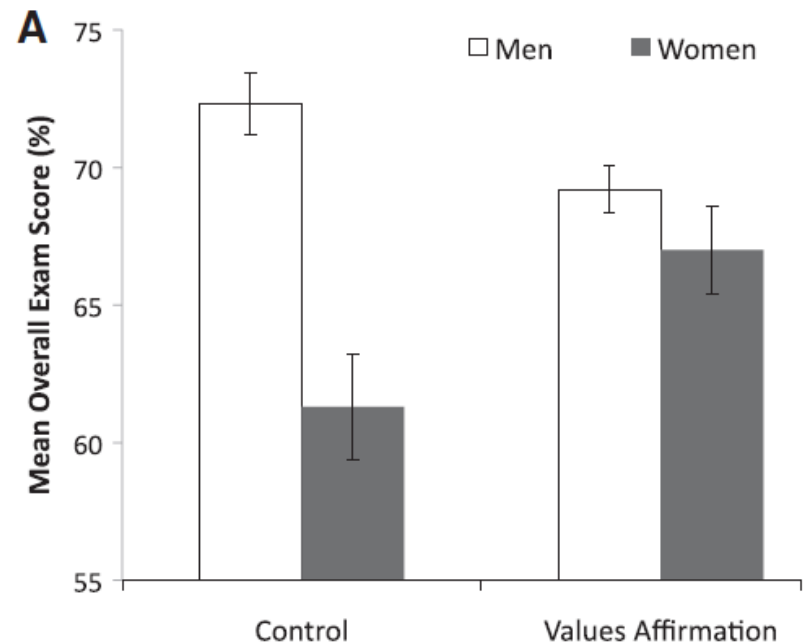
Keywords: gender stereotypes, self-concept, implicit social cognition, role models, science and engineering

(SELF-) AFFIRMATION

Reducing the Gender Achievement Gap in College Science: A Classroom Study of Values Affirmation

Values Affirmation: “Please write about your two most important values. Why are these important to you?”

Control Condition: “Please write about your two least important values. Why might these be important to someone else?”



SOLUTION 3: MAKE THE TASK CHALLENGING, NOT THREATENING



fight



flight

GROWTH MINDSET



Applied Developmental Psychology 24 (2003) 645–662

*Applied
Developmental
Psychology*

Improving adolescents' standardized test performance:
An intervention to reduce the effects of stereotype threat

Growth Mindset: “Intelligence is not a finite endowment, but rather an expandable capacity that increases with mental work.”

Control Condition: No information about growth mindset.

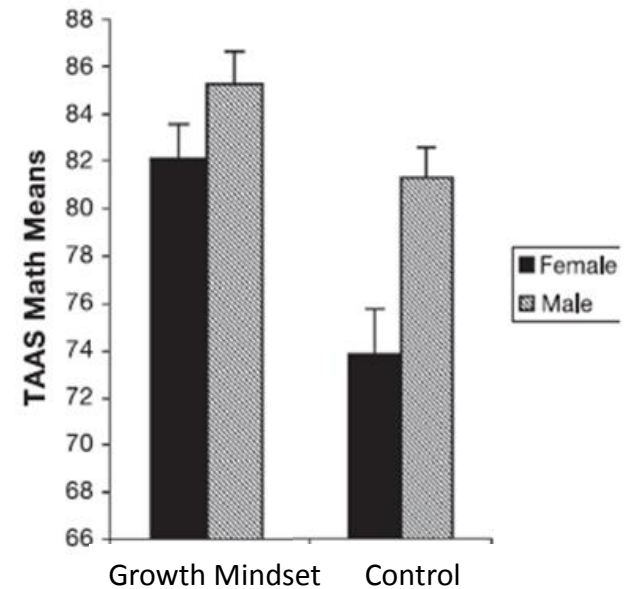


Fig. 1. Average math scores on the TAAS test.

“WISE” FEEDBACK

- Black and white students
- Asked to write a “letter of recommendation” for their favorite teacher, to be published
- Phase 1: Write letter
- Phase 2: Receive critical feedback
- Experimental condition
 - Criticism
 - **Criticism + positive buffer**
 - Criticism + high standards + assurance

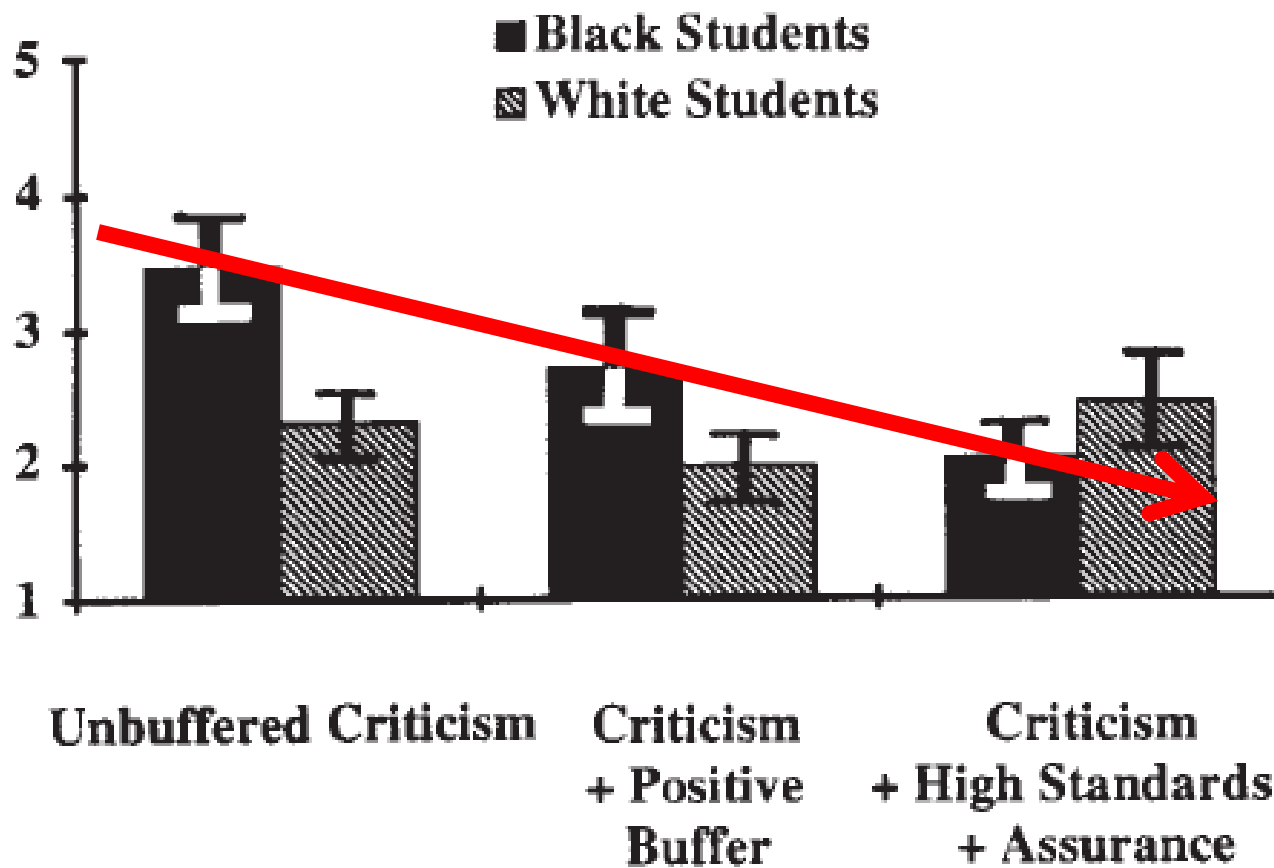


Figure 1 Ratings of bias as a function of race and feedback condition in Study 1.

DON'T sugar coat!

DO invoke high standards

DO provide assurance—but realize that this may mean providing resources

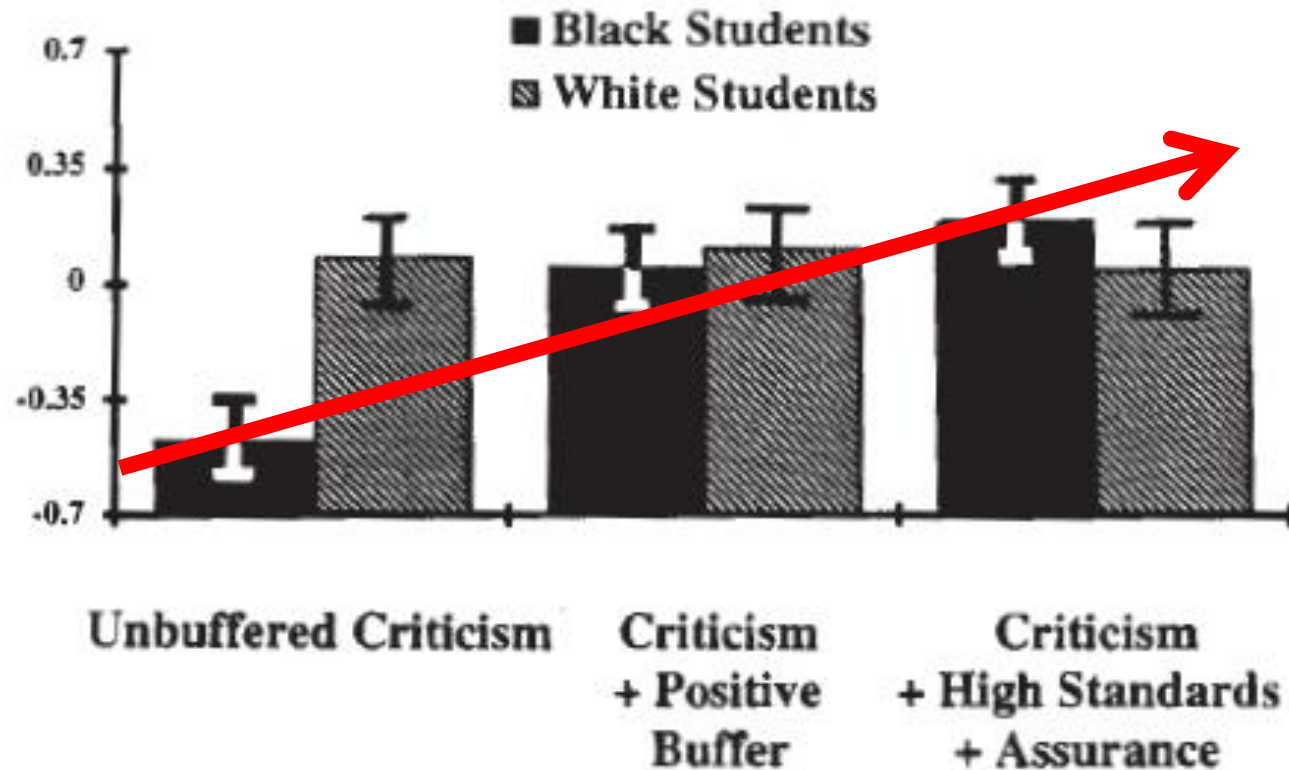


Figure 2 Task motivation as a function of race and feedback condition in Study 1.

STEREOTYPE THREAT

- Stereotype exists
- Person identifies with group and domain
- Test/task is difficult

STEREOTYPE THREAT

- Stereotype exists—***change the stereotype: representation, goals, and physical cues***
- Person identifies with group and domain—***secure identification with group and domain: peers, mentors, and roles models***
- Test/task is difficult—***make task challenging, not threatening: growth mindset, wise feedback***

THOUGHTS? QUESTIONS?

*Thank
You*