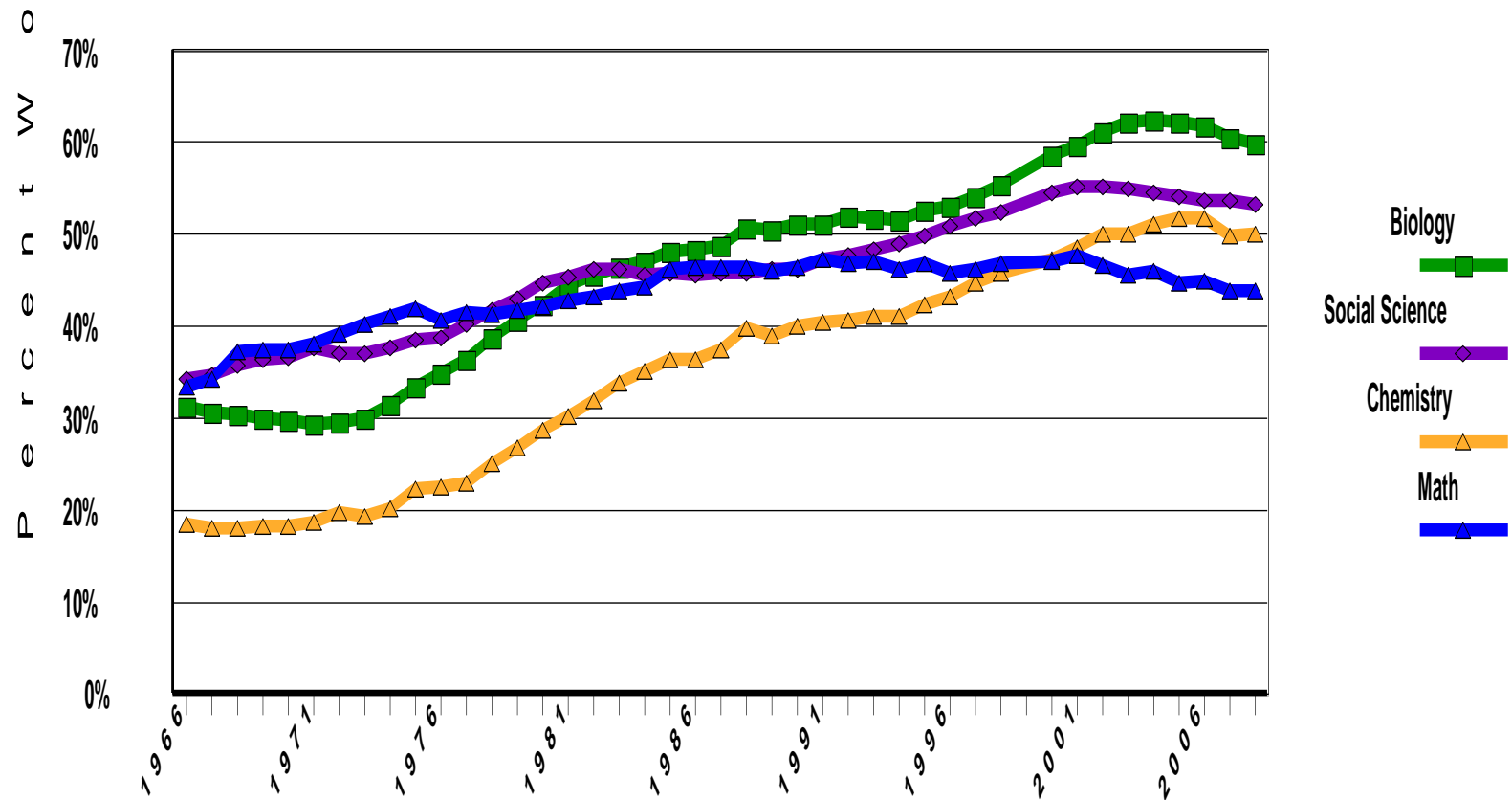


Breaking the Bias Habit

Jennifer Sheridan, Ph.D.
Executive & Research Director
Women in Science & Engineering Leadership Institute

Percent Women Bachelor's Degrees, Selected Fields

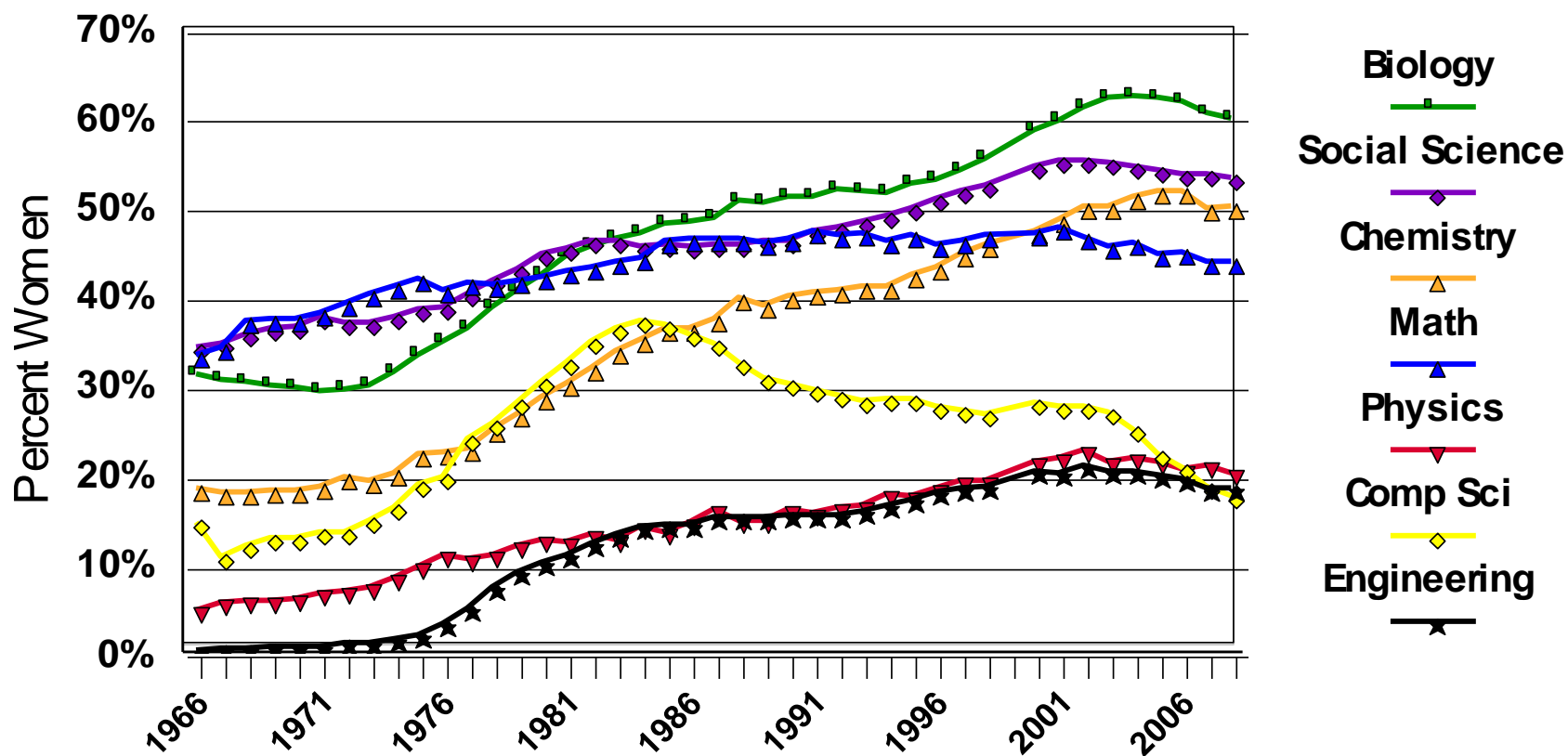
1966 - 2008



Source: National Science Foundation S&E Degrees

Percent Women Bachelor's Degrees, Selected Field

1966 - 2008

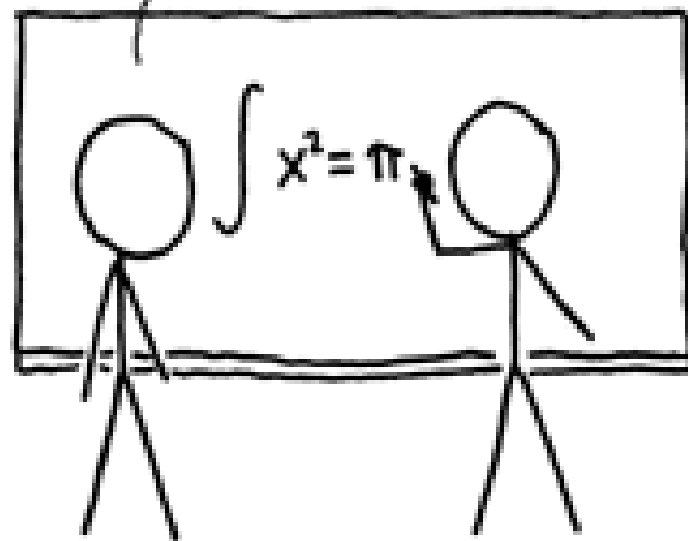


Source: National Science Foundation S&E Degrees

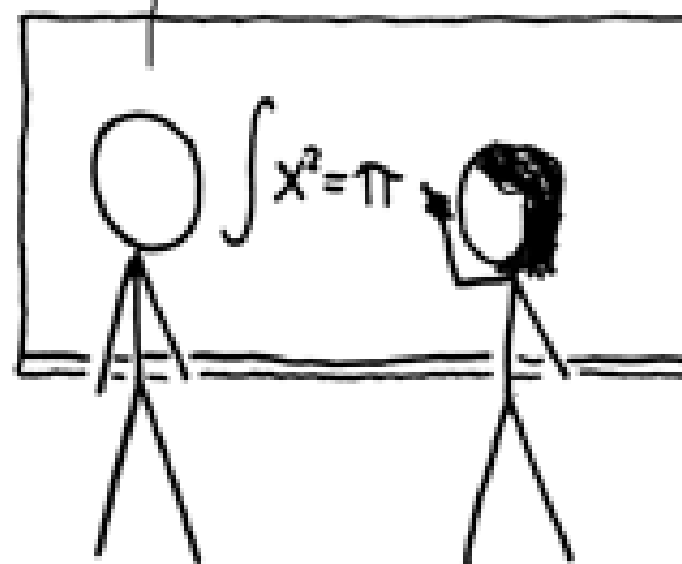
Why?

- Unconscious bias
- Tendency of our minds to evaluate individuals based on characteristics (real or imagined) of the group to which they belong
- Consequences for both the evaluator, and the person being evaluated

WOW, YOU
SUCK AT MATH.



WOW, GIRLS
SUCK AT MATH.



Three Central Ideas

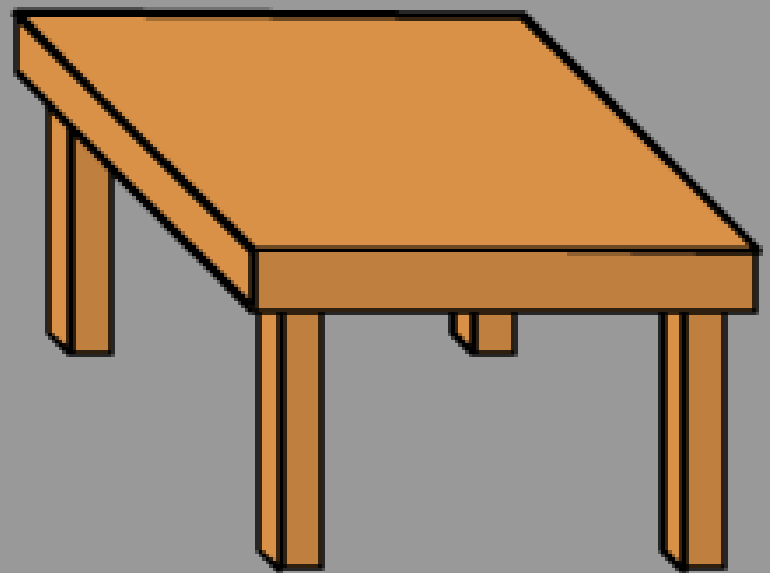
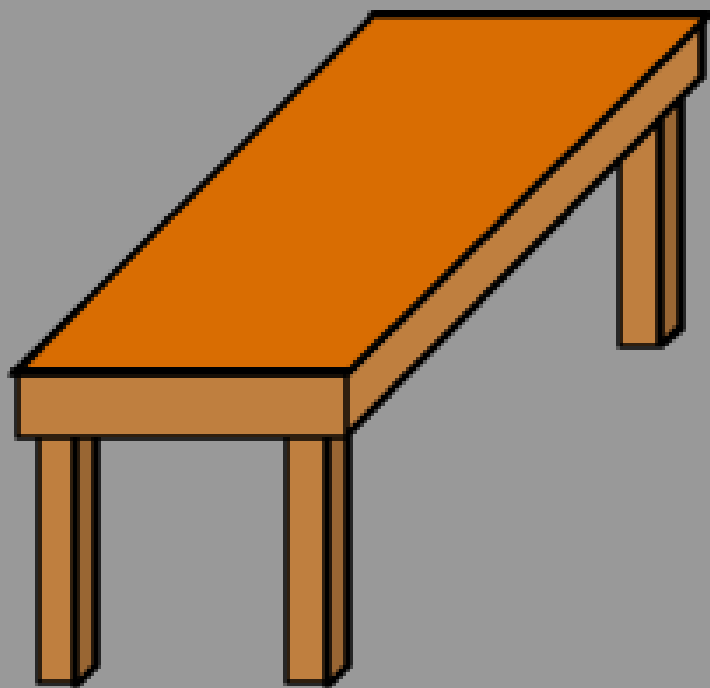
1. Our minds are more than the sum of the conscious parts
 - Implicit processes
2. Unintended thoughts can contradict beliefs
 - Prejudice as a habitual response
3. Acting consistently with beliefs can require more than good intentions
 - Breaking the prejudice habit

Prejudice and Habits of Mind

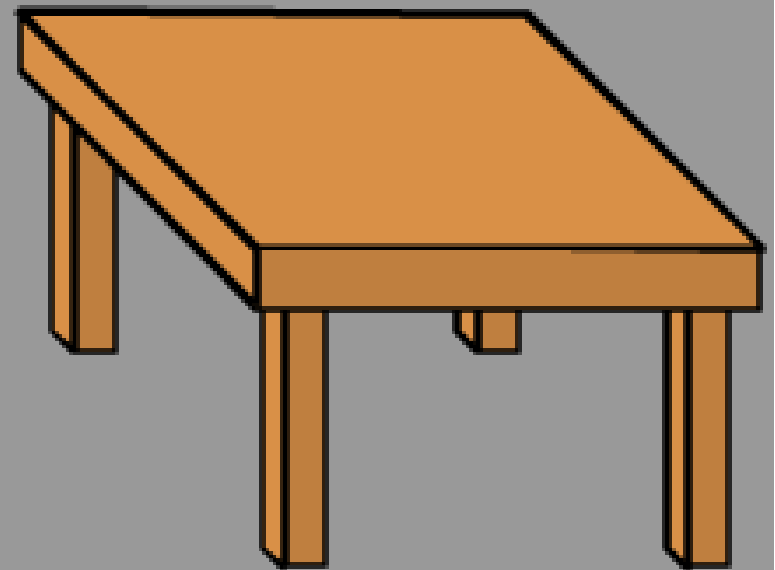
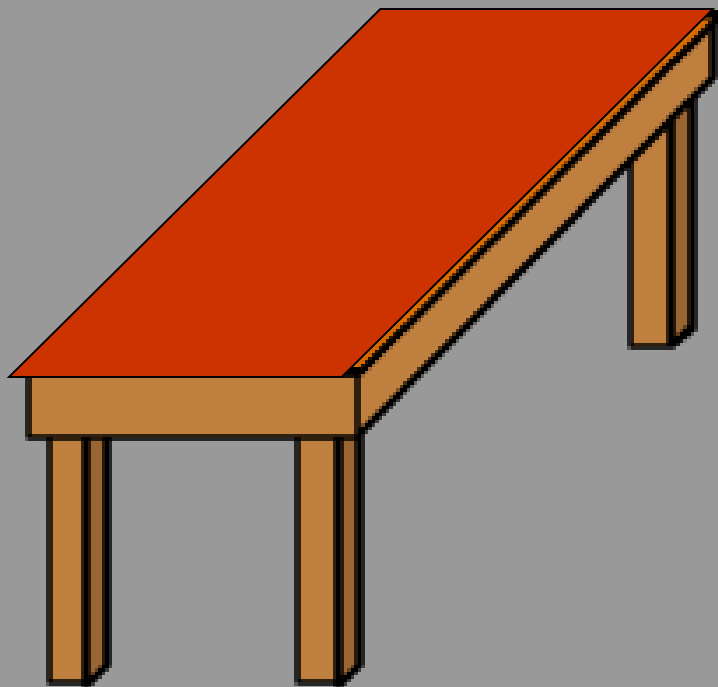
Ordinary mental operations that serve us quite well in most circumstances can fail our intentions

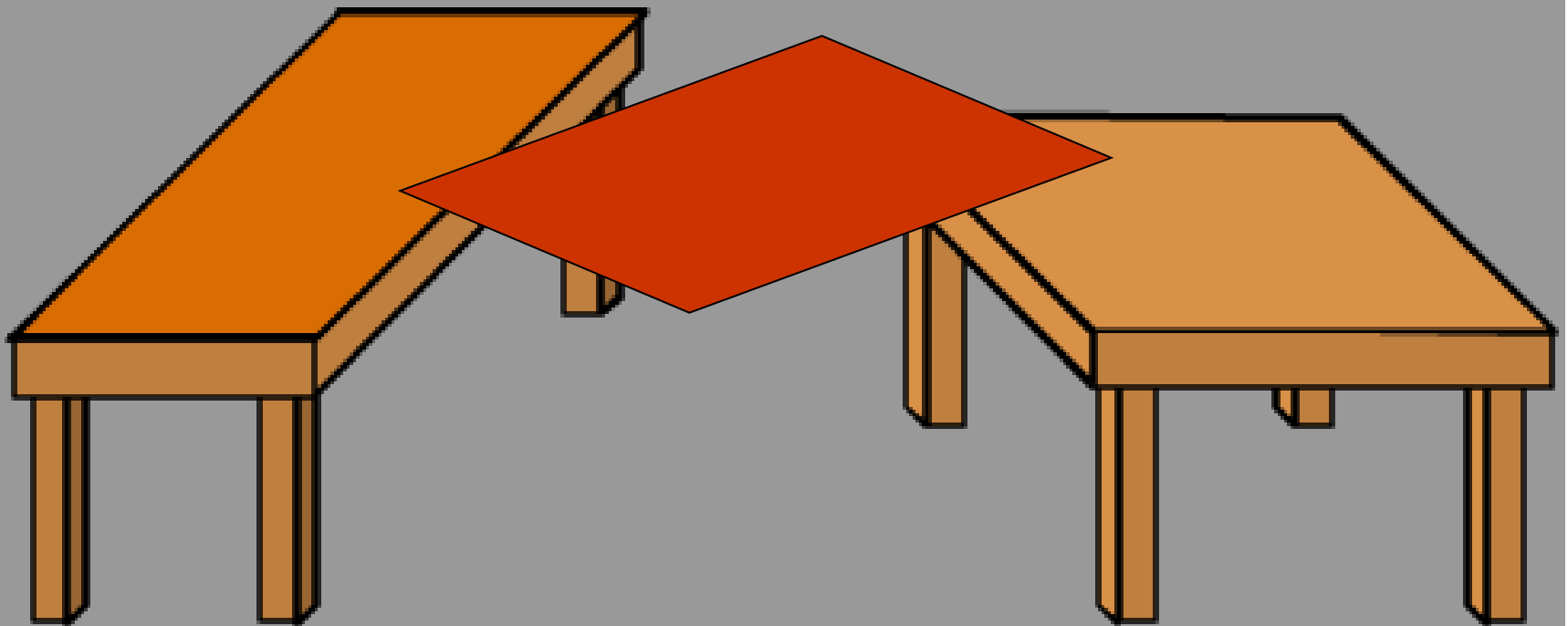
Essential Process...

- Translation of the world outside to a mental experience inside
 - Guided by our experience and expectations
 - Affects our perceptions, judgments, and behavior
- This translation process is not infallible
 - A variety of *habits of mind*, born out of experience, can separate our experience from reality

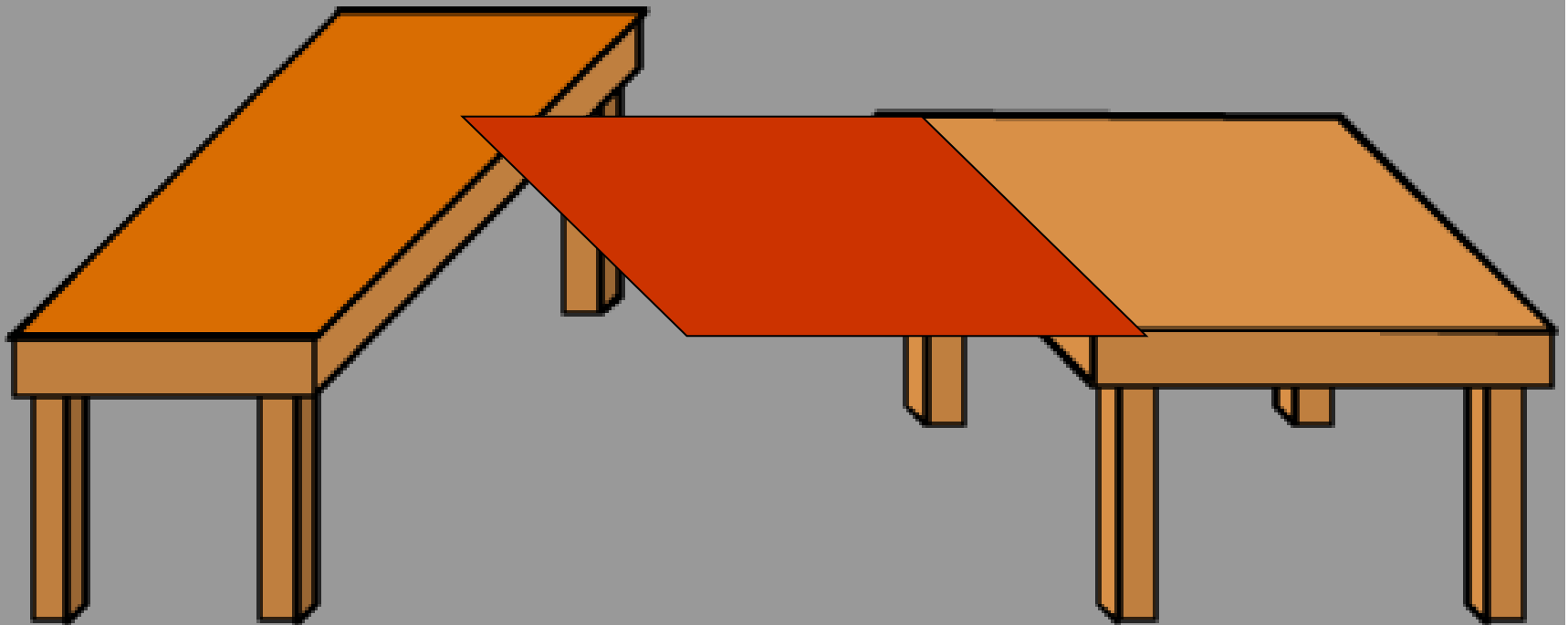


©2005 M.Bach



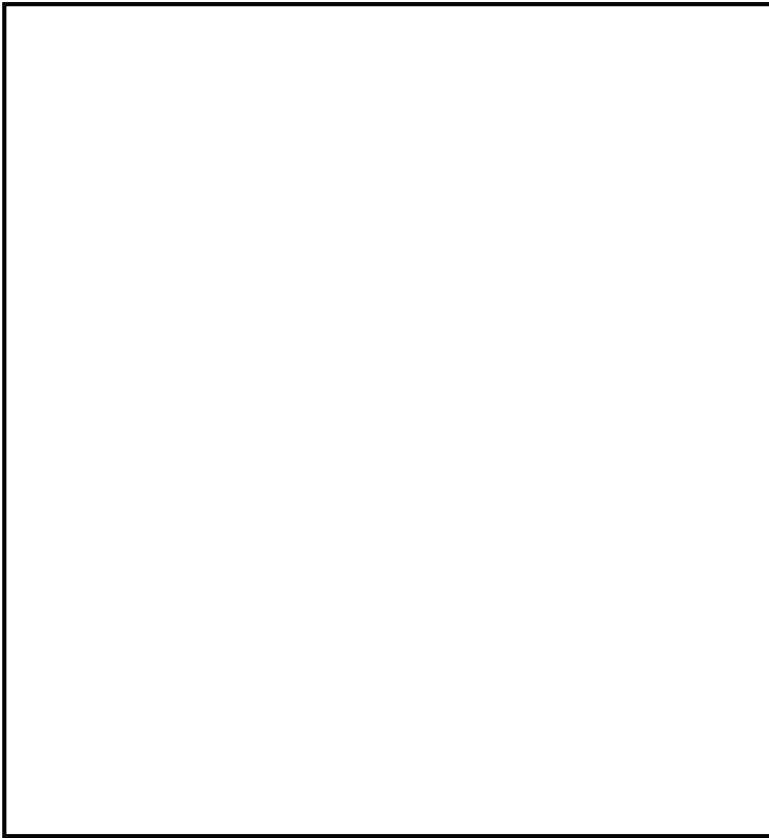


©2005 M.Bach



Stroop Color Naming Task

Compatible Trials



Stroop Color Naming Task

Compatible Trials



RED

Stroop Color Naming Task

Compatible Trials

RED

BLACK

Stroop Color Naming Task

Compatible Trials

RED

BLACK

BROWN

Stroop Color Naming Task

Compatible Trials

RED

BLACK

BROWN

GREEN

Stroop Color Naming Task

Compatible Trials

RED

BLACK

BROWN

GREEN

YELLOW

Stroop Color Naming Task

Compatible Trials

RED

BLACK

BROWN

GREEN

YELLOW

BLUE

Stroop Color Naming Task

Compatible Trials

RED

BLACK

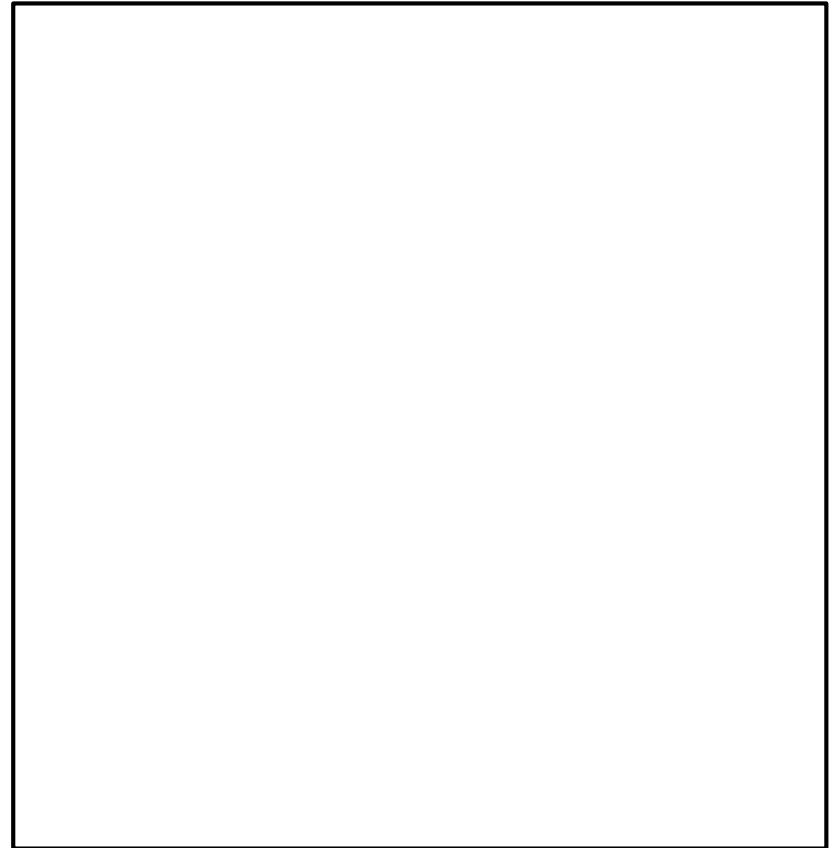
BROWN

GREEN

YELLOW

BLUE

Incompatible
(interference) Trials



Stroop Color Naming Task

Compatible Trials

RED

BLACK

BROWN

GREEN

YELLOW

BLUE

Incompatible (interference) Trials

RED

Stroop Color Naming Task

Compatible Trials

RED

BLACK

BROWN

GREEN

YELLOW

BLUE

Incompatible (interference) Trials

RED

BLACK

Stroop Color Naming Task

Compatible Trials

RED

BLACK

BROWN

GREEN

YELLOW

BLUE

Incompatible (interference) Trials

RED

BLACK

BROWN

Stroop Color Naming Task

Compatible Trials

RED

BLACK

BROWN

GREEN

YELLOW

BLUE

Incompatible (interference) Trials

RED

BLACK

BROWN

GREEN

Stroop Color Naming Task

Compatible Trials

RED

BLACK

BROWN

GREEN

YELLOW

BLUE

Incompatible (interference) Trials

RED

BLACK

BROWN

GREEN

YELLOW

Stroop Color Naming Task

Compatible Trials

RED

BLACK

BROWN

GREEN

YELLOW

BLUE

Incompatible (interference) Trials

RED

BLACK

BROWN

GREEN

YELLOW

BLUE

Construction Worker Experiment

Measuring Unconscious Bias: Gender-and-Science IAT

Logic of the IAT

- IAT provides a measure of the strength of associations between mental categories such as “male and female” and attributes such as “science and humanities” disciplines
- Strength of association between each category and attribute is reflected in the time it takes to respond to the stimuli while trying to respond rapidly
- Trial Types

Congruent Trials

Say “LEFT” for

Science

OR

Men

Say “RIGHT” for

Humanities

OR

Women

Incongruent Trials

Say “LEFT” for

Science

OR

Women

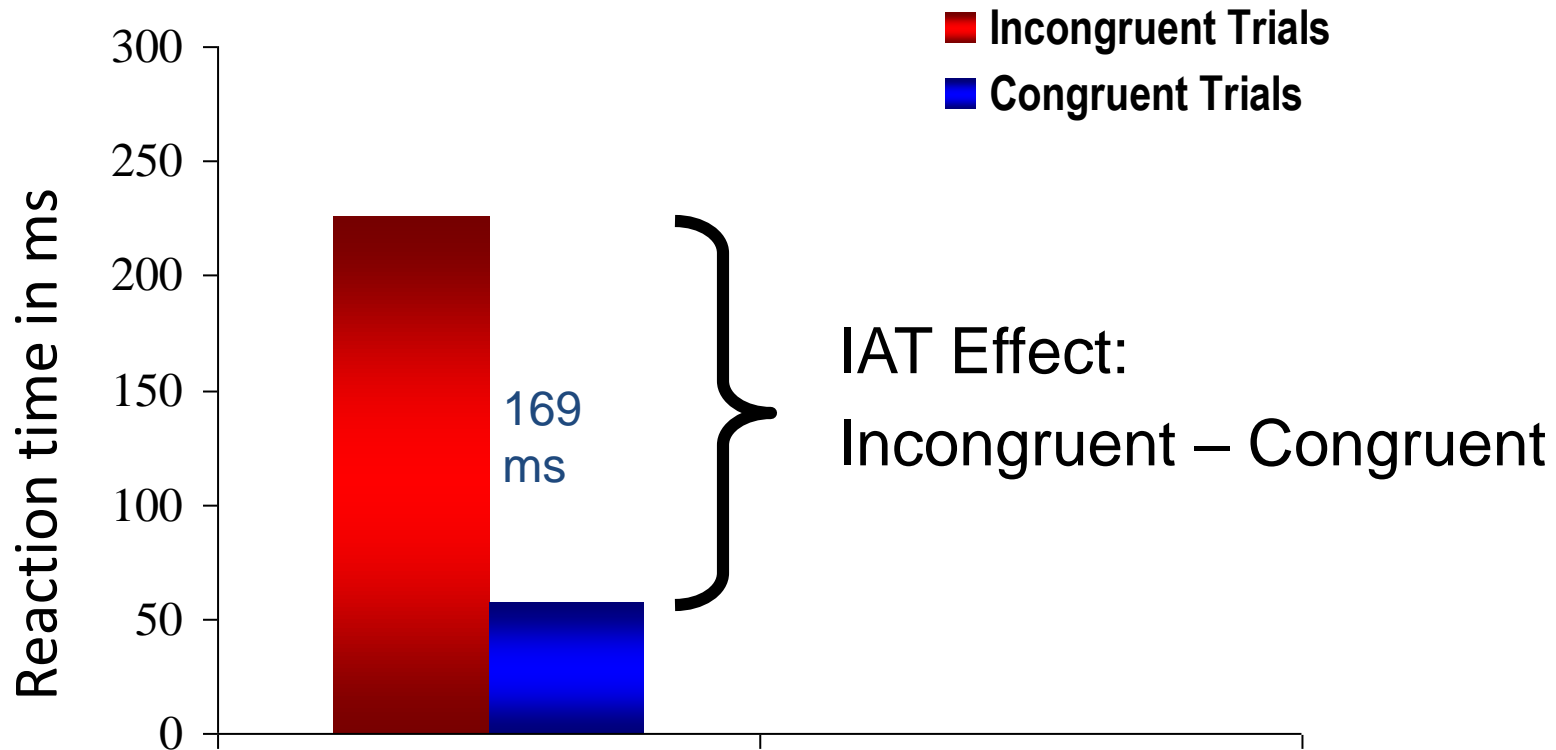
Say “RIGHT” for

Humanities

OR

Men

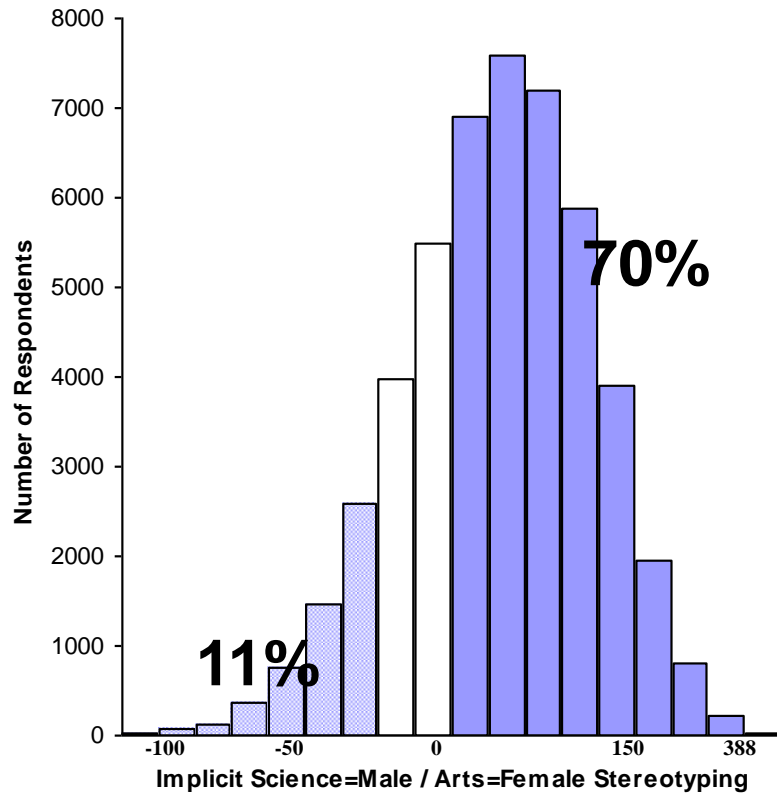
IAT Effect



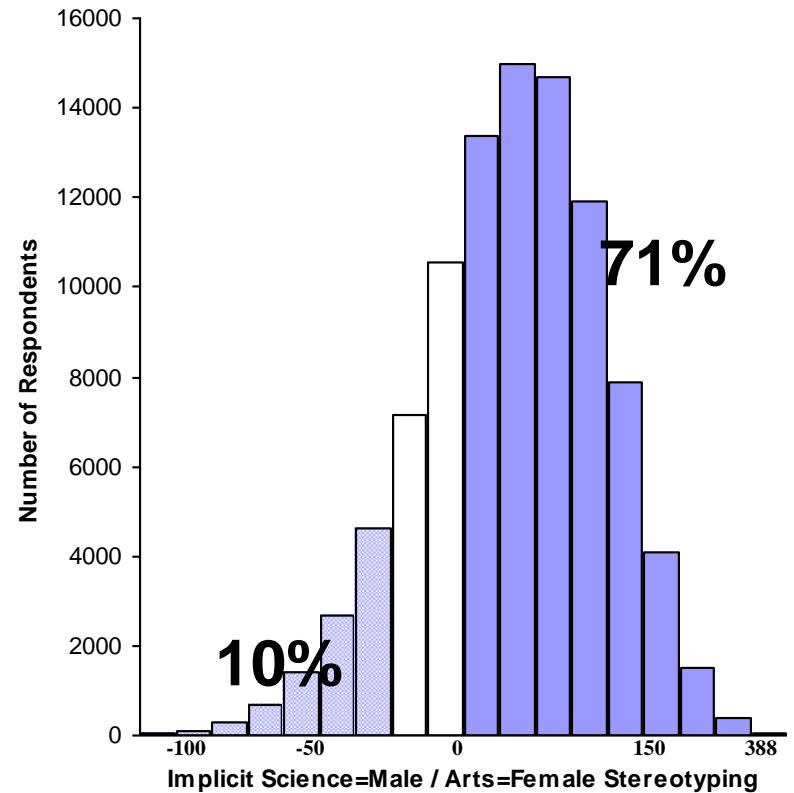
The larger the difference, the greater the bias in associating men with science and women with humanities

Implicit Gender-Science Stereotypes

Male Respondents



Female Respondents



Shift in Conceptualization of Prejudice

Old Framework = Prejudice is bad so if I think or act with bias, I am a bad person

New Framework = Prejudiced thoughts and actions are habits that we all have and breaking these habits requires more than good intentions

How does this affect students?

- Parents/teachers/counselors steer women away from “male” jobs
- Students “choose” jobs that conform to their gender stereotypes
- Evaluators view credentials in ways that conform to gender expectations

Expectancy Bias

Expecting certain behaviors or characteristics in individuals based on stereotypes about the social category to which they belong

Stereotypes about men?

Stereotypes about women?

Role Congruity/Incongruity

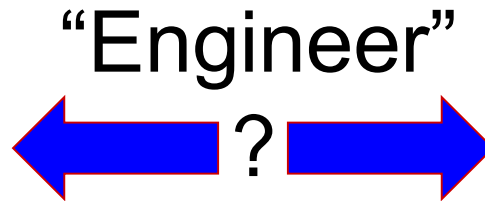
The fit (or lack of fit) between
gender norms and workplace roles

Stereotypes about scientists?

Occupational Role Congruity for men

Men

- Strong
- Decisive
- Independent
- Don't ask for directions
 - Logical
- Lack emotions
- Love sports
- Good at math



Women

- Nurturing
 - Nice
- Supportive
 - Helpful
- Sympathetic
 - Verbal
 - Social
- Creative

Stereotype Threat

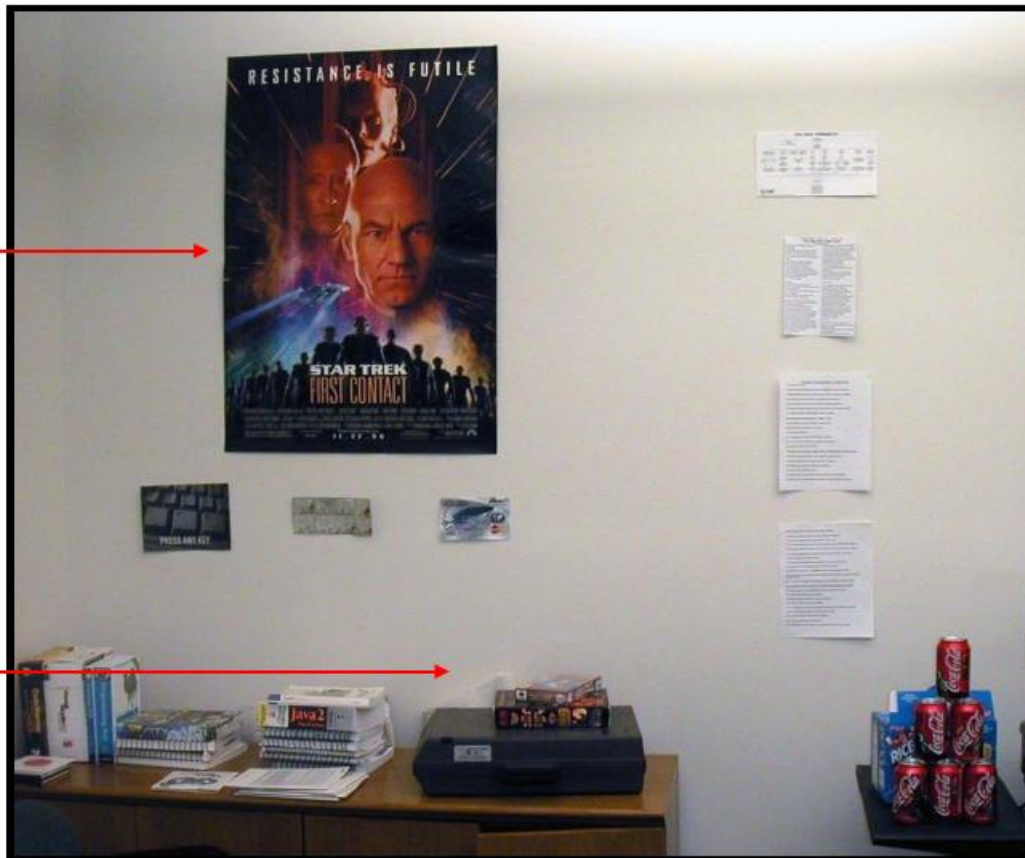
Members of negatively stereotyped groups may underperform when reminded of their group membership

Classroom Environments

Stereotypical room

Star Trek
poster

Sci Fi books



Coke cans

Cheryan, Plaut, Davies & Steele, *Journal of Personality & Social Psychology*, 2009

Images used with permission of Dr. Sapna Cheryan

Classroom Environments

Non-stereotypical room

Nature poster

Neutral books

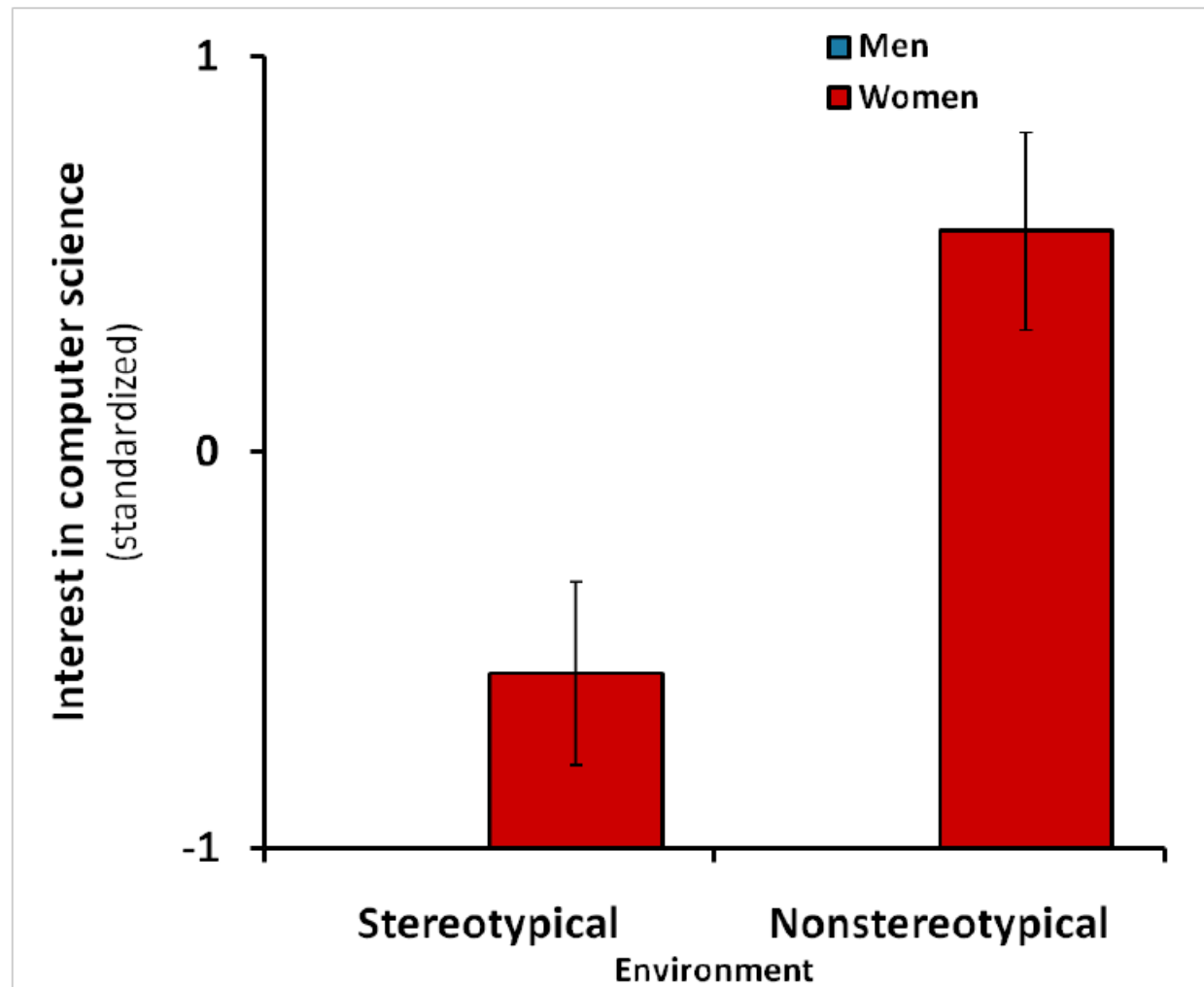


Water bottles

Cheryan, Plaut, Davies & Steele, *Journal of Personality & Social Psychology*, 2009

Images used with permission of Dr. Sapna Cheryan

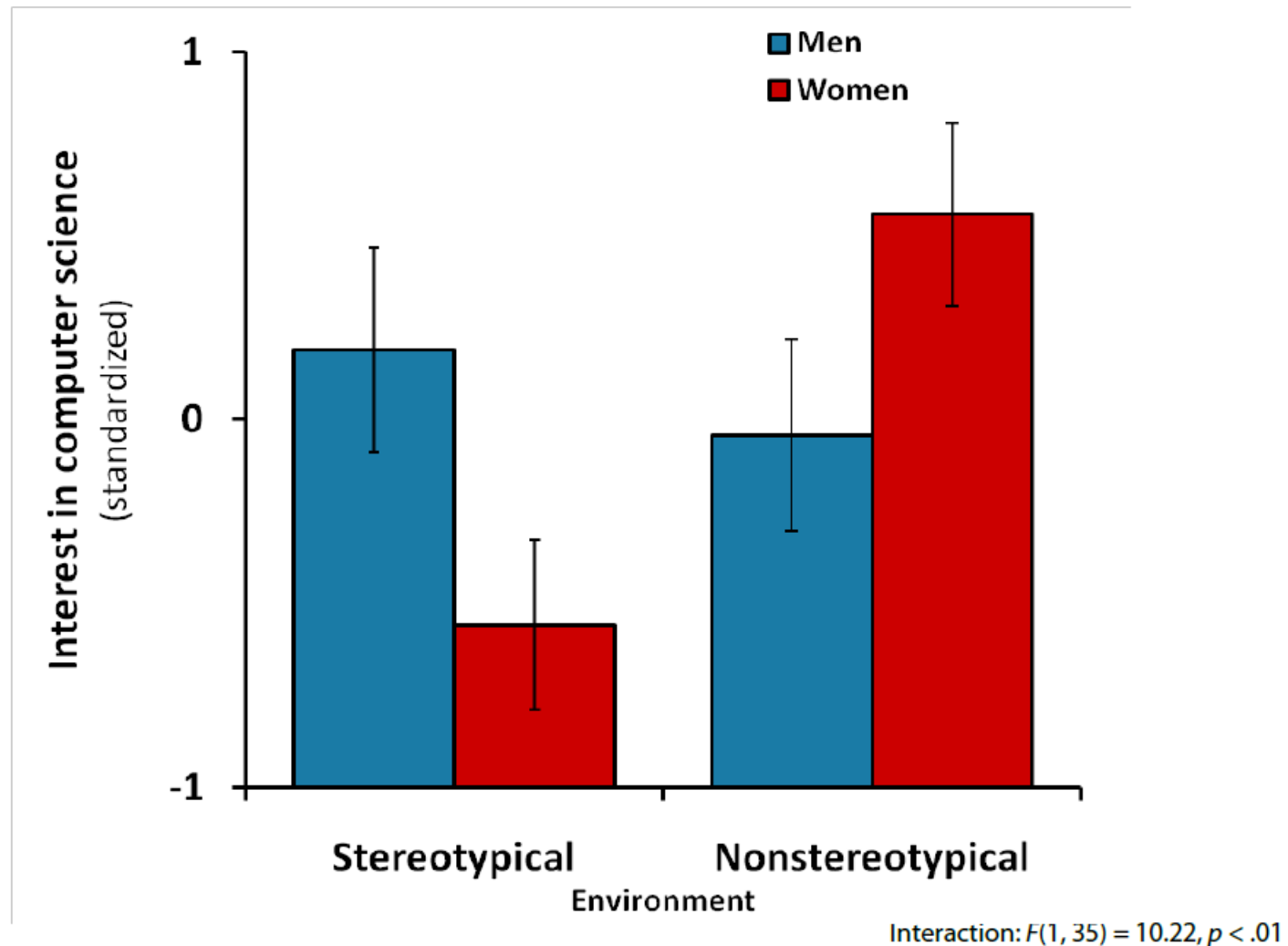
Environment influences women's interest in CS



Cheryan, Plaut, Davies & Steele, *Journal of Personality & Social Psychology*, 2009

Images used with permission of Dr. Sapna Cheryan

Environment influences women's interest in CS



Hiring Lab Managers

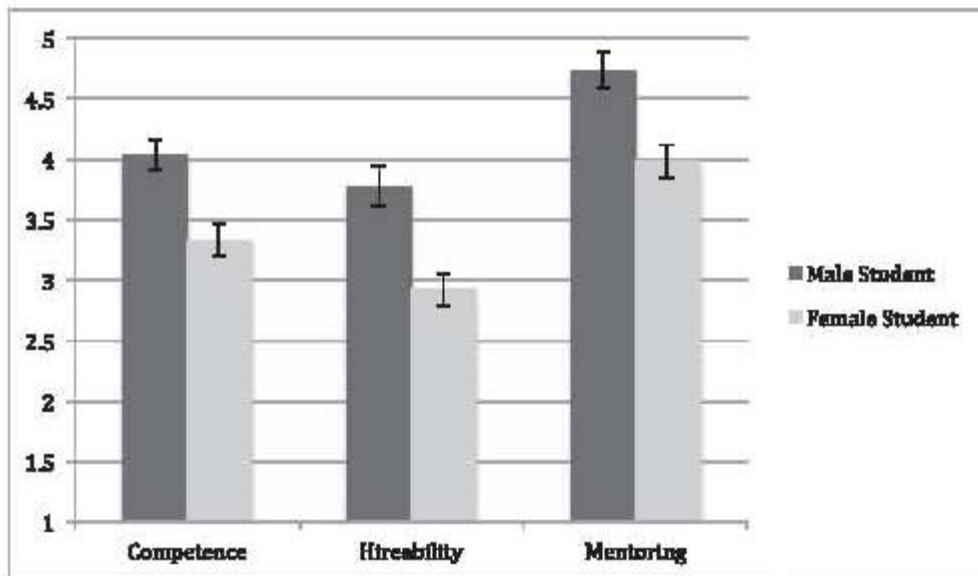


Fig. 1. Competence, hireability, and mentoring by student (collapsed across faculty gender). All student gender differences ($P < 0.001$). Scales range from 1 to 7, with higher numbers representing extent of each variable. Error bars represent SEs. $n_{\text{male student condition}} = 64$.

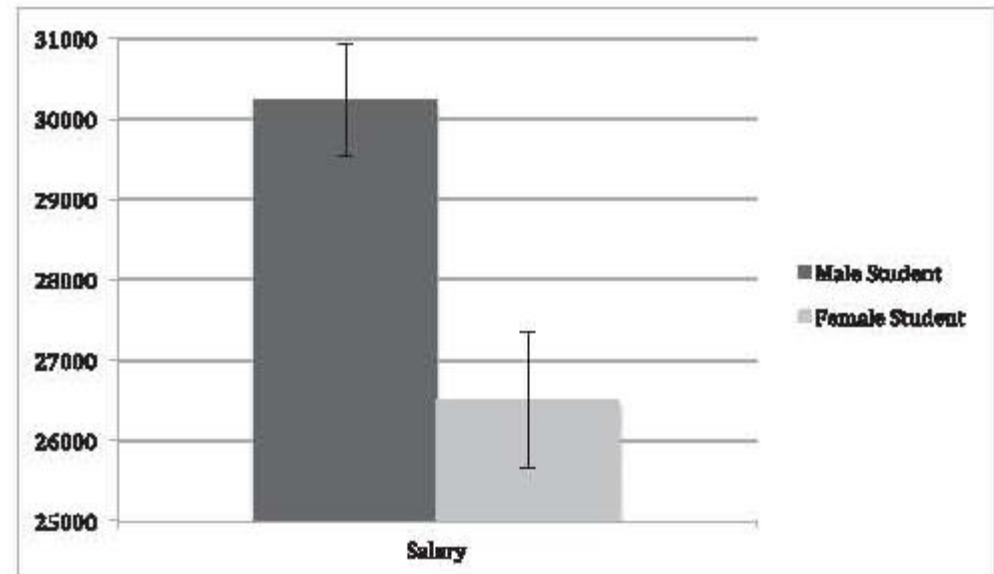


Fig. 2. Salary conferral by student gender condition (collapsed across faculty gender). The student gender difference is significant ($P < 0.01$). The scale ranges from \$15,000 to \$50,000. Error bars represent SEs. $n_{\text{male student condition}} = 63$, $n_{\text{female student condition}} = 64$.

*Strategies to Reduce the Influence of
Implicit Bias*

Bias within these constructs is malleable...

Construct	Intervention	Example of study
↓ <u>Expectancy bias</u> and <u>promote role congruity</u>	Be specific about what a job or task requires, rather than use generalizations or make assumptions	Heilman ME. <i>Organ Behav Hum Perf.</i> 33(2):174-86, 1984.
↓ <u>Effect of stereotype priming</u>	Minimizing stereotype threat by removing gender stereotype priming (e.g. pictures of men and women doing science)	Good et al. <i>J Soc Psychol.</i> 150:132-47, 2010.
↓ <u>Impact of stereotype threat</u>	Stating that “there is no gender difference in ability to perform this task” eliminated impact of priming	Davies, Spencer & Steele. <i>J Pers Soc Psych.</i> 88:276-287, 2005.

Strategies That DO NOT Work

- **Stereotype Suppression**

(e.g., Galinsky & Moskowitz. *J Pers Soc Psychol* 2000;
Monteith et al. *Pers Soc Psychol Rev* 1998)

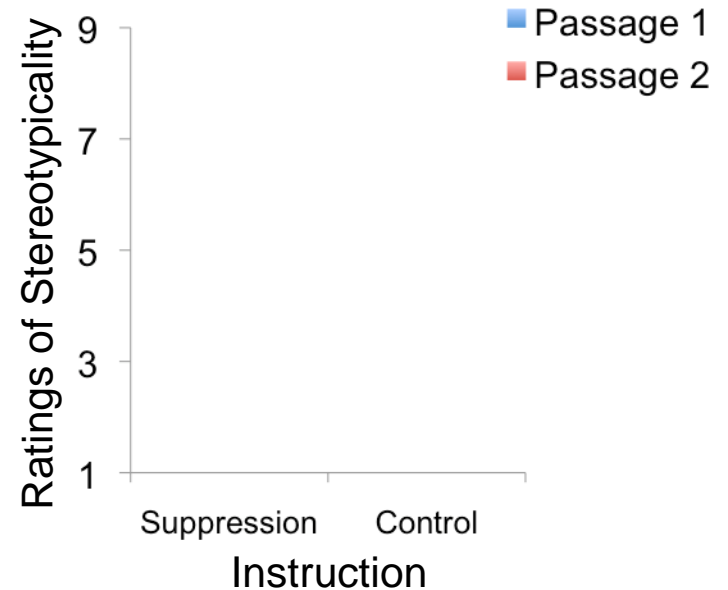
- Banish stereotypes from one's mind
(i.e., gender or race “blind”)

Strategies That DO NOT Work

- **Stereotype Suppression**

(e.g., Galinsky & Moskowitz. *J Pers Soc Psychol* 2000;
Monteith et al. *Pers Soc Psychol Rev* 1998)

- Banish stereotypes from one's mind (i.e., gender or race “blind”)
- Macrae et al (1994, Experiment 2)
(Macrae et al. *J Pers Soc Psychol* 1994)

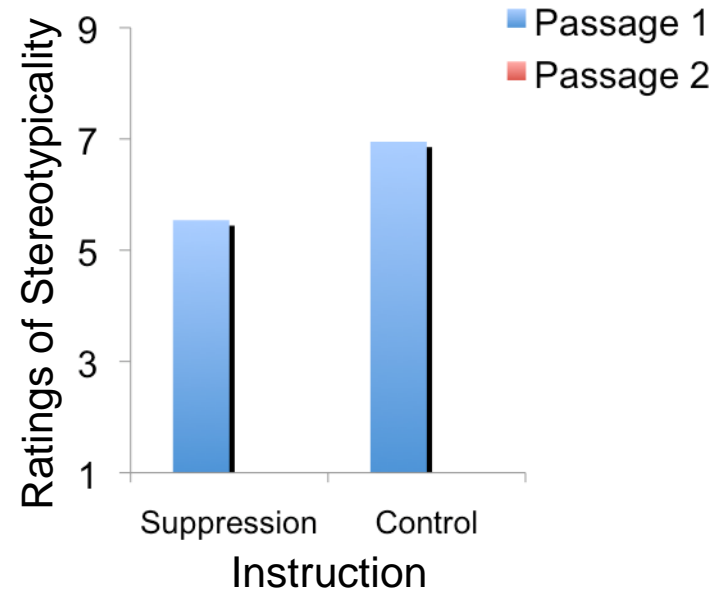


Strategies That DO NOT Work

- **Stereotype Suppression**

(e.g., Galinsky & Moskowitz. *J Pers Soc Psychol* 2000;
Monteith et al. *Pers Soc Psychol Rev* 1998)

- Banish stereotypes from one's mind (i.e., gender or race “blind”)
- Macrae et al (1994, Experiment 2)
(Macrae et al. *J Pers Soc Psychol* 1994)

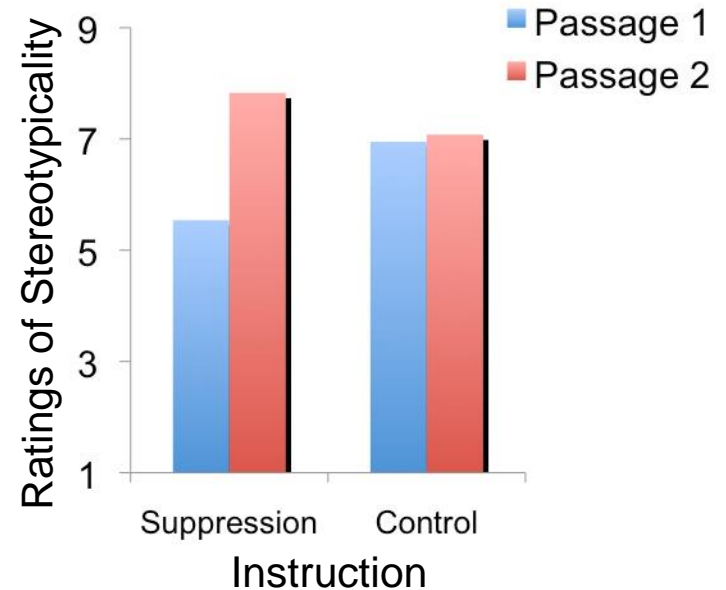


Strategies That DO NOT Work

- **Stereotype Suppression**

(e.g., Galinsky & Moskowitz. *J Pers Soc Psychol* 2000;
Monteith et al. *Pers Soc Psychol Rev* 1998)

- Banish stereotypes from one's mind (i.e., gender or race “blind”)
- Macrae et al (1994, Experiment 2)
(Macrae et al. *J Pers Soc Psychol* 1994)

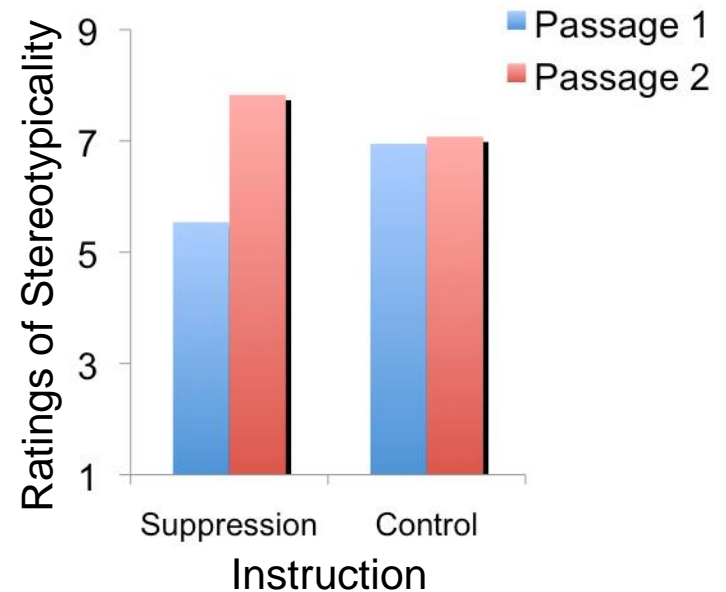


Strategies That DO NOT Work

- **Stereotype Suppression**

(e.g., Galinsky & Moskowitz. *J Pers Soc Psychol* 2000;
Monteith et al. *Pers Soc Psychol Rev* 1998)

- Banish stereotypes from one's mind (i.e., gender or race “blind”)
- Macrae et al (1994, Experiment 2) (*Macrae et al. J Pers Soc Psychol* 1994)
- Rebound effects



Strategies That DO NOT Work

- **Stereotype Suppression** (e.g.,

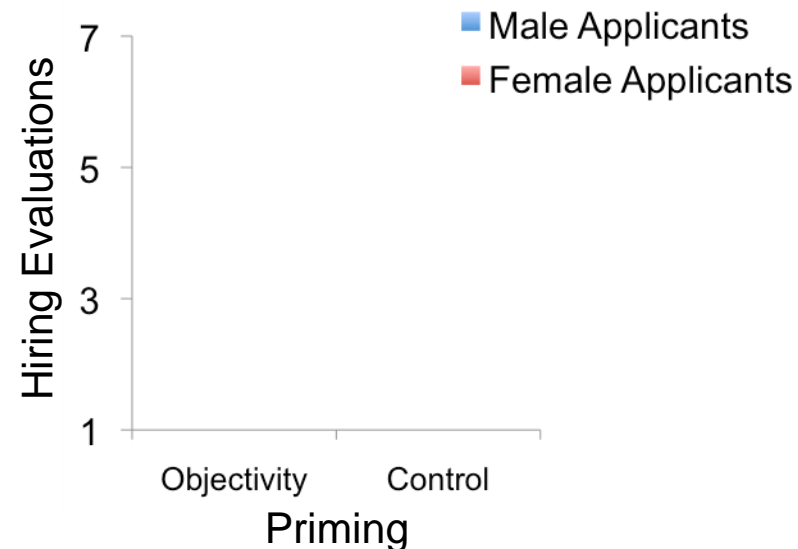
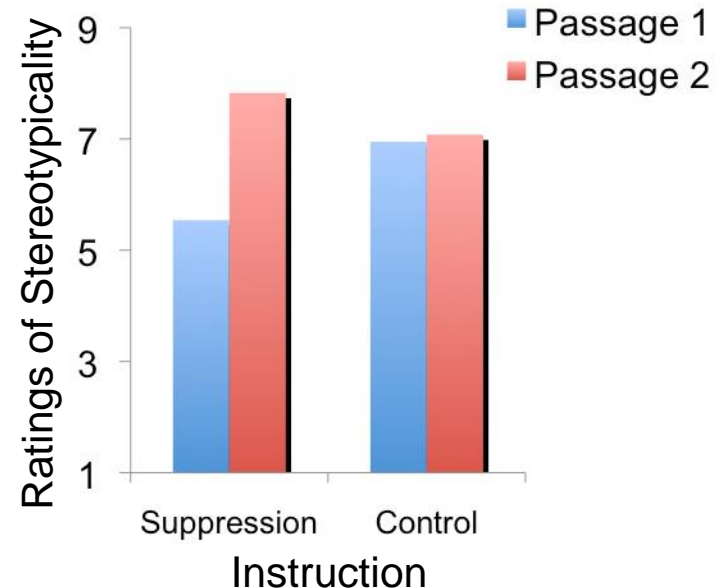
Galinsky & Moskowitz. *J Pers Soc Psychol* 2000; Monteith et al. *Pers Soc Psychol Rev* 1998)

- Banish stereotypes from one's mind (i.e., gender or race “blind”)
- Macrae et al. (1994, Experiment 2) (Macrae et al. *J Pers Soc Psychol* 1994)
- Rebound effects

- **Belief in personal objectivity**

(Uhlmann & Cohen. *Organ Behav Hum Decis Process* 2007)

- Leads to biased evaluations of women



Strategies That DO NOT Work

- **Stereotype Suppression** (e.g.,

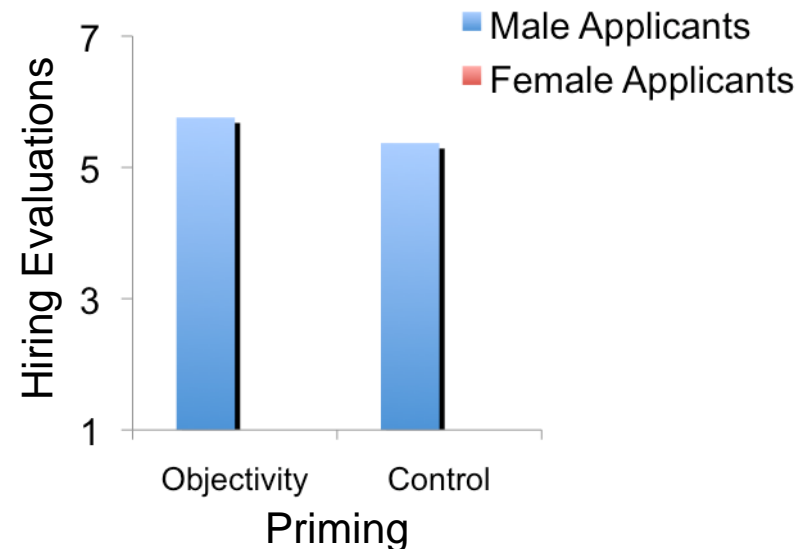
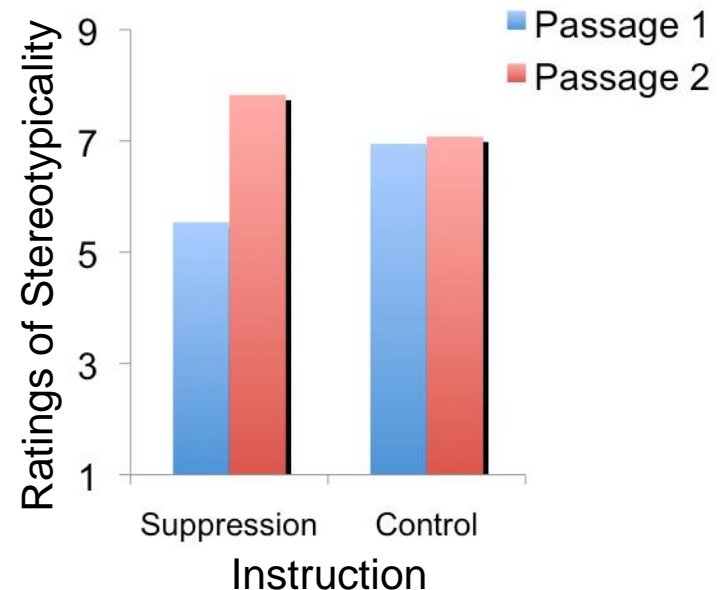
Galinsky & Moskowitz. *J Pers Soc Psychol* 2000; Monteith et al. *Pers Soc Psychol Rev* 1998)

- Banish stereotypes from one's mind (i.e., gender or race “blind”)
- Macrae et al. (1994, Experiment 2) (Macrae et al. *J Pers Soc Psychol* 1994)
- Rebound effects

- **Belief in personal objectivity**

(Uhlmann & Cohen. *Organ Behav Hum Decis Process* 2007)

- Leads to biased evaluations of women



Strategies That DO NOT Work

- **Stereotype Suppression** (e.g.,

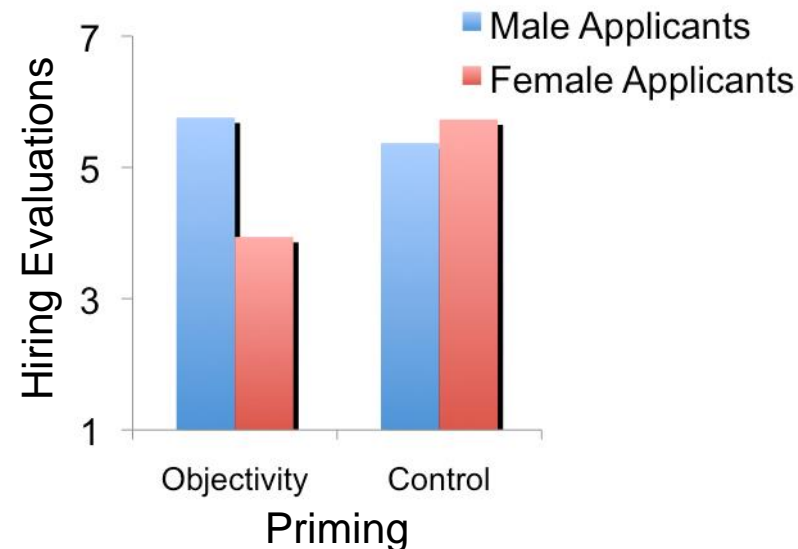
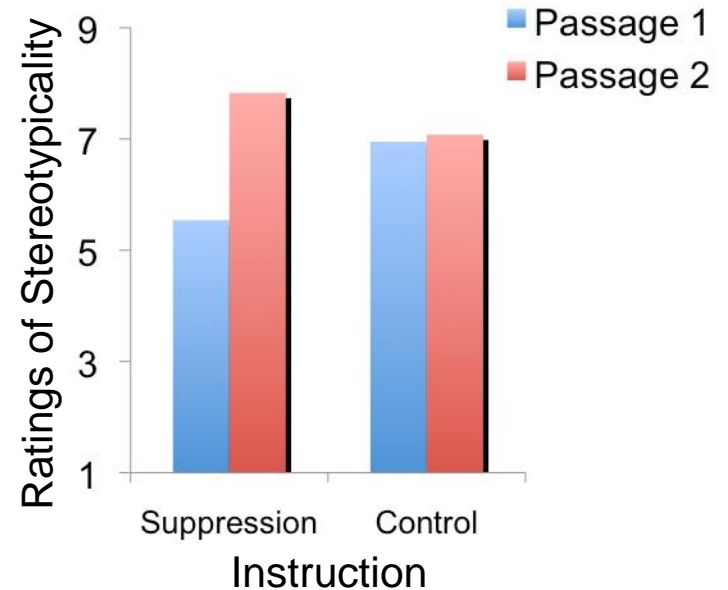
Galinsky & Moskowitz. *J Pers Soc Psychol* 2000; Monteith et al. *Pers Soc Psychol Rev* 1998)

- Banish stereotypes from one's mind (i.e., gender or race “blind”)
- Macrae et al. (1994, Experiment 2) (Macrae et al. *J Pers Soc Psychol* 1994)
- Rebound effects

- **Belief in personal objectivity**

(Uhlmann & Cohen. *Organ Behav Hum Decis Process* 2007)

- Leads to biased evaluations of women



1. Stereotype Replacement

- ✓ Recognize when you have stereotypic thoughts, and recognize stereotypic portrayals in society. For example,
 - *Women students are less interested in engineering than in social studies*
 - *Portrayal of females as poor at math or males as unable to do housework*
- ✓ Challenge the fairness of the portrayal and replace it with a non-stereotypic response. For example,
 - *I know many successful women engineers*
 - *Research does not support a gender difference in math performance once we control for the number of math courses taken*

2. Counter-Stereotype Imaging

- ✓ Help regulate your response by imagining a counter-stereotype woman in detail
 - *e.g., Imagine an astronaut, engineer, CEO who is also a woman OR specific positive counter-stereotypical individuals you know*

3. Individuating (instead of generalizing)

- ✓ Avoid making a snap decision based on a stereotype
 - *e.g., Make gender less salient than being a scientist, physician, or engineer*
- ✓ Obtain more information on specific qualifications, past experiences, etc. before making a decision
- ✓ Practice making situational attributions rather than dispositional attributions
 - *e.g., If a woman does poorly on an exam, consider a situational explanation (maybe she didn't get enough sleep) rather than a dispositional explanation (e.g., she's terrible at math)*

4. Perspective-Taking

- ✓ Adopt the perspective (in the first person) of a member of the stigmatized group
 - *For example, imagine what it would be like to...*
 - *Have your abilities called into question*
 - *Not be offered opportunities because of assumptions about what fields you will like*

5. Increasing Opportunities for Contact

- ✓ Seek out opportunities for greater interaction with counter-stereotypic women
 - *e.g., Ensure guest teachers or speakers brought into the school are diverse,*

Breaking the Prejudice Habit

- Not necessarily easy
- With effort (awareness, motivation, and a sustained commitment), prejudice is a habit that can be broken
 - Can expect that you may slip up
 - Stay committed
- Strategies we provided are powerful tools to combat implicit biases
 - Implicit responses can be brought into line with explicit beliefs

Questions

Extra Slides

CONGRUENT TRIALS

Press “LEFT” key for

COMPETENT

or

(WHITE FACE)



Press “RIGHT” key for

INCOMPETENT

or

(BLACK FACE)



INCONGRUENT TRIALS

Press “LEFT” key for

Press “RIGHT” key for

COMPETENT

or

(BLACK FACE)



INCOMPETENT

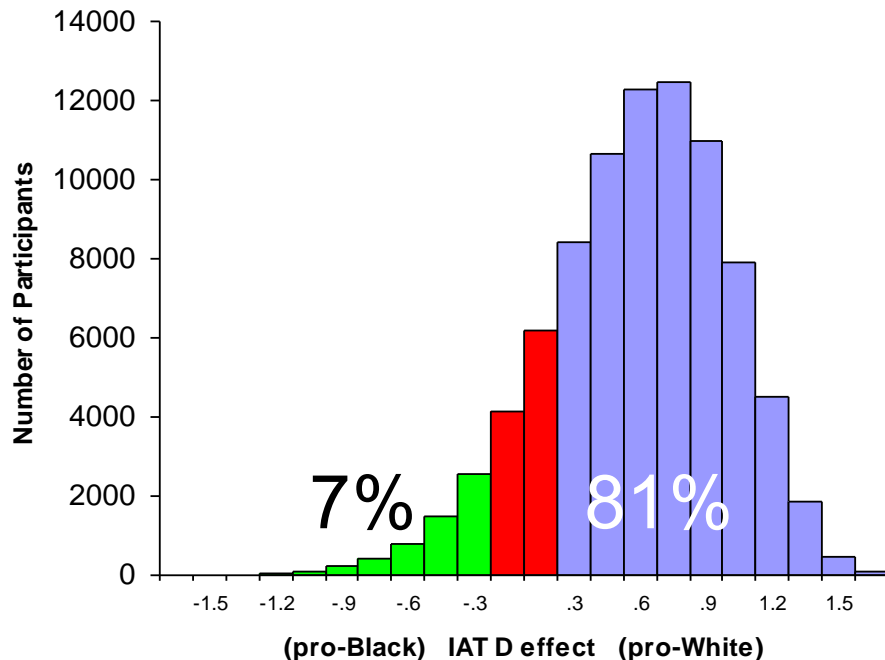
or

(WHITE FACE)

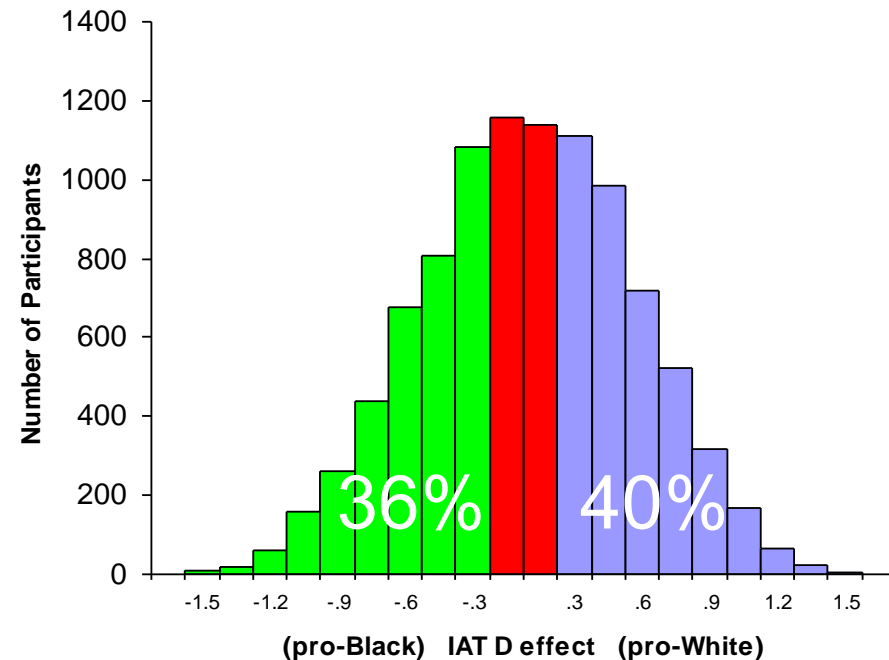


Implicit preference for Whites compared to Blacks

White Ss (N=85,531)



Black Ss (N=9,735)



Other Ss (N=22,338): pro-Black=12%, pro-White=72%



AFP/Getty Images - Tue Aug 30,
3:47 AM ET

Two residents waded through chest-deep water after finding bread and soda from a local grocery store after Hurricane Katrina came through the area in New Orleans, Louisiana. (AFP/Getty Images/Chris Graythen)

[Email Photo](#) [Print Photo](#)

RECOMMEND THIS PHOTO » Recommended Photos
Recommend It: Average (210 votes)



RELATED

• Katrina's Effects, at a Glance AP - Tue Aug 30, 1:26 PM ET

[Hurricanes & Tropical Storms](#)

ADD SLIDESHOW TO MY YAHOO! OR RSS READER





AP Associated Press AP - Tue Aug 30, 11:31 AM ET

A young man walks through chest deep flood water after looting a grocery store in New Orleans on Tuesday, Aug. 30, 2005. Flood waters continue to rise in New Orleans after Hurricane Katrina did extensive damage when it

[Email Photo](#) [Print Photo](#)

RECOMMEND THIS PHOTO » [Recommended Photos](#)

Recommend It:



Average (138 votes)



RELATED

• [Looting Takes Place in View of La. Police](#) AP - Tue

EXPECTANCY BIAS



AFP/Getty Images - Tue Aug 30,
3:47 AM ET

Two residents wade through chest-deep water after finding bread and soda from a local grocery store after Hurricane Katrina came through the area in New Orleans, Louisiana. (AFP/Getty Images/Chris Graythen)

[Email Photo](#) [Print Photo](#)

RECOMMEND THIS PHOTO [Recommended Photos](#)
Recommend It: Average (210 votes)
☆☆☆☆☆ ★★★★★

RELATED

• Katrina's Effects, at a Glance AP - Tue Aug 30, 1:26 PM ET

[Hurricanes & Tropical Storms](#)

ADD SLIDESHOW TO MY YAHOO! OR RSS READER



AP Associated Press AP - Tue Aug 30, 11:31 AM ET

A young man walks through chest deep flood water after looting a grocery store in New Orleans on Tuesday, Aug. 30, 2005. Flood waters continue to rise in New Orleans after Hurricane Katrina did extensive damage when it

[Email Photo](#) [Print Photo](#)

RECOMMEND THIS PHOTO [Recommended Photos](#)
Recommend It: Average (130 votes)
☆☆☆☆☆ ★★★★★

RELATED

• Looting Takes Place in View of La. Police AP - Tue

Applications/CVs/Résumés

- Resumes of differing quality are randomly assigned white-sounding or African American-sounding names
 - Mailed in response to actual job ads in Chicago, Boston. Callbacks are measured.
 - White names are 50% more likely to be called back.
 - White names with high quality resume are 27% more likely to be called back (compared to whites with low quality), but Black names with high quality resume are only 8% more likely to be called back. (Less return to labor market experience for blacks.)
 - Neighborhood, job/employer characteristics not significant



Do you "play" fair?
choose your preferred platform



FAIR PLAY

What is Fair Play?

What are implicit biases?

Content of the Game

Am I implicitly biased?



Crystal Chen
PhD Candidate

WHAT IS FAIR PLAY?

In Fair Play, players take on the perspective of Jamal Davis, a young Black graduate student, on his way to becoming a renowned professor. As Jamal, players must conquer implicit bias, explore surroundings, and build Jamal's network to prove his full research potential. The game provides ample opportunity for players to experience implicit biases, particularly in encounters with other characters, as they navigate the world of academia as Jamal.

WHAT ARE IMPLICIT BIASES?

Implicit biases are unconscious assumptions based on group stereotypes. Research has found that taking the cognitive perspective of an individual from a stigmatized group can reduce one's implicit bias. It is through social interactions with other characters, as a form of role-play that Fair Play simulates real-life bias encounters to raise awareness about people's implicit biases, while challenging players to identify, and act on these biases, in real-time.



Bryan Hernandez
PhD Candidate



CONTENT OF THE GAME

Throughout the game there are instances that exemplify several kinds of racial biases (Racial microaggressions, color blind attitude, etc.) to which the player is given a list of responses. The player must choose the best response to these biases while trying to improve relationships with the game's characters to improve his academic career.

AM I IMPLICITLY BIASED?



Lucie Baird
PhD Candidate

Unfortunately, we all are biased to some degree, and these biases stem from stereotypes we inherit from our culture. These biases, whether consciously endorsed or not, have a cumulative effect and contribute to the lack of diversity in academia. Fair Play draws from research in the field of game studies and implicit bias to create an immersive experience where players can see the impact of implicit bias, in an academic setting, first hand. What implicit biases do people have? How do they affect one's academic career? If a person exhibits a racial bias, do I address it or ignore it? These are the kinds of questions at the heart of Fair Play.

Players will be able to understand different kinds of racial biases, and will be able to demonstrate different strategies to deal with biases which the players themselves may experience in their daily lives.



Shania Ferris
Post-Doc

Try the Fair Play videogame!

http://gameslearningsociety.org/fairplay_microsite/