Breaking the Bias Habit

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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
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
Stroop Color Naming Task

Compatible Trials
Compatible Trials

RED
Stroop Color Naming Task

Compatible Trials

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Incompatible (interference) Trials
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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

<table>
<thead>
<tr>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Strong</td>
<td>• Nurturing</td>
</tr>
<tr>
<td>• Decisive</td>
<td>• Nice</td>
</tr>
<tr>
<td>• Independent</td>
<td>• Supportive</td>
</tr>
<tr>
<td>• Don’t ask for directions</td>
<td>• Helpful</td>
</tr>
<tr>
<td>• Logical</td>
<td>• Sympathetic</td>
</tr>
<tr>
<td>• Lack emotions</td>
<td>• Verbal</td>
</tr>
<tr>
<td>• Love sports</td>
<td>• Social</td>
</tr>
<tr>
<td>• Good at math</td>
<td>• Creative</td>
</tr>
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**“Engineer”**

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Stereotype Threat

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

Stereotypical room

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

[Bar graph showing the comparison between men and women's interest in computer science in stereotypical and nonstereotypical environments.]

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

Images used with permission of Dr. Sapna Cherven
Environment influences women’s interest in CS

Interest in computer science (standardized)

Stereotypical Environment

Nonstereotypical Environment

Interaction: $F(1, 35) = 10.22, p < .01$


Images used with permission of Dr. Sapna Cheryan
Hiring Lab Managers
Fig. 1. Competence, hireability, and mentoring by student (collapsed across faculty gender). All student gender differences are statistically significant ($P < 0.001$). Scales range from 1 to 7, with higher numbers representing greater 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. $n_{\text{male student condition}} = 63$, $n_{\text{female student condition}} = 64$. 

Moss-Racusin et al. 2012.
Strategies to Reduce the Influence of Implicit Bias
Bias within these constructs is malleable...

<table>
<thead>
<tr>
<th>Construct</th>
<th>Intervention</th>
<th>Example of study</th>
</tr>
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<tr>
<td><strong>↓ Expectancy bias and promote role congruity</strong></td>
<td>Be specific about what a job or task requires, rather than use generalizations or make assumptions</td>
<td>Heilman ME. Organ Behav Hum Perf. 33(2):174-86, 1984.</td>
</tr>
<tr>
<td><strong>↓ Effect of stereotype priming</strong></td>
<td>Minimizing stereotype threat by removing gender stereotype priming (e.g. pictures of men and women doing science)</td>
<td>Good et al. J Soc Psychol. 150:132-47, 2010.</td>
</tr>
<tr>
<td><strong>↓ Impact of stereotype threat</strong></td>
<td>Stating that “there is no gender difference in ability to perform this task” eliminated impact of priming</td>
<td>Davies, Spencer &amp; Steele. J Pers Soc Psych. 88:276-287, 2005.</td>
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Strategies That DO NOT Work

• Stereotype Suppression
  – Banish stereotypes from one’s mind
    (i.e., gender or race “blind”)
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  - Rebound effects
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• Belief in personal objectivity (Uhlmann & Cohen. *Organ Behav Hum Decis Process* 2007)
  – Leads to biased evaluations of women
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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

COMPETENT
or
(BLACK FACE)

Press “RIGHT” key for

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%
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)
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
EXPECTANCY BIAS

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)

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
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

Bertrand & Mullainathan 2004
Try the Fair Play videogame!

http://gameslearningsociety.org/fairplay_microsite/