Why are John and Steve more likely to become department chair than Jennifer or Jamal?

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Today’s lecture will consider the following:

1. How cultural stereotypes can constrain opportunities for advancement in academic medicine and science

2. Some of our research on stereotype-based bias with text analysis, code leadership by medical residents, and a video game

3. Effective strategies for “breaking the bias habit”
% Men (red) and Women (blue)

Women = 51% U.S. population

Black/African American

- U.S. population = 12%
- Medical Students = 6.1%
- Faculty = 2.8%
- Full professors as % of all U.S. medical faculty = 1.4%
- Department chairs = 2.8% (W=0.2%; M=2.6%)

https://members.aamc.org/eweb/upload/Diversity%20in%20Medical%20Education_Facts%20and%20Figures%202012.pdf
Do we care?

- The Difference: How the Power of Diversity Creates Better Groups, Firms, Schools and Societies (*Scott E. Page*)
- The Wisdom of Crowds (*James Surowiecki*)
- Link between women leaders and improvements in women’s health (*Carnes et al. JWH, 2008*)
- Women leaders more likely to be transformational (*Eagly et. al., Psychol Bull 2003*)
Two kinds of inter-group bias

1. Explicit, consciously endorsed, personal beliefs
   • Decreasing

2. Implicit processes based on mere existence of cultural stereotypes
   • Still highly prevalent – https://implicit.harvard.edu/implicit/demo/takeatest.html
   • Strong predictor of behavior in some settings, even if at odds with personal beliefs
   • A major factor in preventing diversity in academic medicine and perpetuating healthcare disparities

Cultural stereotypes about men and women

- Men are *agentic*: Decisive, competitive, ambitious, independent, willing to take risks
- Women are *communal*: nurturing, gentle, supportive, sympathetic, dependent

*Works of multiple authors over 30 years: e.g. Eagly, Heilman, Bem, Broverman*
Implicit Gender-Science Stereotypes

Male Respondents

Female Respondents

Nosek BA, Banaji MR & Greenwald AG, 2006  
http://implicit.harvard.edu/
Gender and Leadership IAT Scores

Male Respondents
(n=359)

Female Respondents
(n=315)
Science and leader more strongly associated with male than female

“Pictures of scientists”

“Pictures of leaders”
Impact of gender stereotypes

- On evaluation of Jennifer for male-typed role:
  - Lack of fit (e.g. Koenig et al. Psychol Bull 137:616, 2011)
  - Assumption of lower competence (multiple studies by Biernat and colleagues; e.g. Biernat et al., Social Cognition 26:288, 2008)
  - Social reprisal for violating gender norms (e.g. Okimoto & Heilman J Soc Iss 68:704, 2012)

- On Jennifer:
  - Stereotype threat = underperformance due to the threat of confirming the stereotype (Burgess et al., 87:506, Acad Med, 2012)
"Agentic" specialties: Neurosurgery, Orthopedics, Urology

Lower status within specialties:
- education,
- service,
- anything specific to care of women,
- lower rank,
- non-tenured

Higher status within specialties:
- procedures (e.g. interv. cards, gyn oncology),
- higher rank,
- tenured

"Communal" specialties: Pediatrics, Family Medicine, primary care IM specialties

Carnes, 2010
Male and female students socialized toward different specialties?

- Text analysis of 297 MSPEs
- Only female students with female authors had family medicine correlated with standout adjectives
- Male students
  - Male authors: Family medicine absent
  - Female authors: Family medicine negatively correlated with ability & insight
    - “[he] really surprised us! [he] is an exceptional student [in family medicine].”
    - “although [he] received highest honors on [his] family medicine rotation, surely [his] finest performance was on surgery ... was outstanding - spoke with families, got consent forms signed, was extremely aggressive....”

Isaac et al., Acad Med 86:1, 2011
Gender stereotypes and evaluation


• “Goldberg” designs indicate that work performed by women is rated of lower quality than work performed by men regardless of the rater’s gender (reviewed in Isaac et al. *Acad Med* 2009)

• Science faculty rated a male applicant as more competent, hireable, deserving of mentorship, and worth a higher salary than an identically credentialed female student whom they found more likeable. (*Moss-Racusin et al. PNAS 2012*)
Quantitative text analysis of R01 critiques

- 443 grant reviews from R01s awarded after unfunded in 2008 (N=65)
- Women’s: more standout adjectives (e.g., excellent, outstanding) ($p \leq 0.01$)
- Men’s: more negative descriptors (e.g., unfocused, illogical) ($p \leq 0.01$)

**Standout Adjectives**

**Negative Evaluation**

Women held to higher confirmatory standards for fundable research?
Men held to higher confirmatory standard for unfundable research?

*Kaatz et al., 2013, under review*
Jennifer vs. John

Impact of gender stereotypes

• On evaluation of Jennifer for male-typed role:
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“She’s a bitch!”
Exploring code leadership

• Interview 25 medical residents from 9 programs
• Male and female residents felt both genders equally effective
• Code leadership = highly agentic
  
  Assertive, authoritative presence, loud deep voice, tall

• Counternormative behavior stressful for female residents
  
  “I just felt kind of bad yelling at people”
  
  “I always turn red”
  
  “I just try my best to look authoritative...but it’s stressful”

• Female residents found effective strategies to integrate conflicting identities
Strategies to integrate dual identities

- Permission to suspend gender norms
  - “That is not a very accepted way to speak to people outside of a code but I think in that room it’s fine.”
  - “Normally I’m very much ‘would you mind please putting in a line?’ [In a code] it’s a different situation totally. I just drop the formalities and pleasantries.”
  - “I’m super apologetic afterward”

- Affirm legitimate power
  - wearing your long coat, having a badge that says ‘resident’, announcing ‘I have the code pager’

- Adopt a “code persona” and a “code stance”
  - “I tend to stand at the foot of the bed or have my hands on the foot of the bed and then just sort of lean over the patient a little bit...[it] makes me feel like I’m more in control of the situation.”
Powerful postures make one think and act like a powerful person

Implications for resident training

• Clear affirmation that research finds no difference in effectiveness of male and female code leaders (Wayne et al. Simul Healthc 7:134, 2012; Kolehmainen et al. Acad Med, 2013)

• Acknowledge existence of socialized gender norms and greater departure from those norms and code leader behaviors for women than men

• Present some strategies that have helped others (along with evidence-base)
David vs. Jamal

70-80% of IAT takers more strongly associate White faces with pleasant words and Black faces with unpleasant words

Implicit bias predicts:

- Awkward body language in conversations between a White student and a Black student (Dovidio, et al., 2002) or Black experimenter ( McConnell and Leibold, 2001)
- Interpretation of friendliness in facial expressions (Hugenberg & Bodenhausen, 2003)
- More negative evaluations of a Black vs. a White individual’s ambiguous actions (Devine, 1989; Rudman & Lee, 2002)
- Inadequate prescription of opioid analgesics in identical clinical vignettes of Black vs. White patients in pain (Sabin, 2012)
- Failure to follow treatment guidelines in prescribing thrombolytic therapy in identical vignettes of Black vs. White patient with acute myocardial infarction (Green et al., 2007)
Using a video game to address issues of race bias

- Web-based game inspired by point-and-click adventure games
- Players take the perspective of Jamal Davis, African American graduate student
- 5 chapters, each with goals
  - e.g. Chapter 1: write personal statement, find out about funding, select an advisor
- Goal:
  - Provide an authentic experience where player has agency to discover implicit bias and its consequences in a safe space as a means to transformative learning
Challenges

• Ensuring that the contents are authentic, engaging, and not offensive
• Making sure that the game does not actually reinforce negative societal stereotypes
• Encountering bias events without putting all the responsibility for action on Jamal
Examples of biases in *Fair Play* that could negatively impact an academic career

- **Color-Blind Racial Attitudes** *(e.g., Plaut et al. 2009; Morrison et al. 2010; Ryan et al., 2007)*
  - Dr. McNamara, a faculty member, tells Jamal that he treats all students the same whether they are white, black, or polka-dot

- **Tokenism** *(e.g., Wright, 2001)*
  - Jamal is asked to speak on behalf of all Black people

- **Status Leveling** *(e.g., Smith, 1985)*
  - Lucas, a graduate student, assumes Jamal is a caterer rather than an incoming graduate student

- **Racial Microaggression** *(McCabe, 2009; Sue et al., 2007; Sue, 2010)*
  - Wall portraits of past departmental faculty are all White men
The Almanac

- Just in time or on-demand learning
- Track examples of implicit bias
- Provide definitions of terms
- Citations to relevant literature
Possible Uses for *Fair Play*

- Initiate discussion of sensitive topic of bias
- Professional development
- Promote perspective-taking as a way to induce empathy and reduce implicit bias *(Gutierrez, B. et al., Games for Health, in press)*
Breaking the bias habit takes more than good intentions

- Awareness
- Motivation
- Self-efficacy
- Positive outcome expectations
- Deliberate practice

Breaking the bias habit in academic science, medicine & engineering

- Cluster Randomized Controlled Study
- 92 departments (2290 faculty) – 46 pairs
  - General discipline, School/College, size
  - Randomly allocated to experimental or wait list control
- Intervention = 2.5 hour workshop
  - Attendance/dept = 31%, SD =21
  - Overall 301 attended/1137 invited = 26%
- Measures (50.4% response rate)
  - Implicit Association Test (gender and leadership)
  - Motivation to engage in gender bias reduction
  - Gender equity self-efficacy
  - Gender equity outcome expectations
  - Self-reported gender equity action
Personal Bias Reduction Strategies

- Stereotype Replacement
- Counter-Stereotypic Imaging
- Individuating
- Perspective-Taking
- Increase Opportunities for Contact


- Plus 2 that DON’T work:
  - Stereotype Suppression
  - Too Strong a Belief in One’s Personal Objectivity

N = 92 departments; 1154 faculty (50.4% response rate)

* Statistically significant difference of $p<0.05$ between experimental and control departments compared with differences at baseline

** Significant only for departments in which ≥25% of faculty attended the intervention workshop, $p<0.05$
Does changing behavior of faculty affect departmental culture?

Study of Faculty Worklife:

- Faculty surveyed baseline and after completion of interventions; 41%, 43% response (N=671 responded both times)

- Experimental vs. control improvements in:
  - Research valued (P=0.024)
  - “Fit” in department (P=0.019)
  - Comfort raising personal/family issues that conflict with department activities (P=0.025)
Summary & Conclusions

1. Cultural stereotypes about race and gender lead to subtle unintentional advantages in academic career advancement for John and Steve not afforded to Jennifer or Jamal

2. Stereotype-based bias is a habit that can be broken, but it requires more than good intentions

3. Breaking the bias habit appears to improve department climate for everyone