Faculty Evaluation: How Implicit Bias Can Derail Departmental Goals

University of Pittsburgh
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Objectives

• Frame issue on gender and academic medicine
• Illustrate how implicit assumptions about gender can lead to cognitive distortions in evaluation
• Describe a workshop for hiring committees
• Strategies for “breaking the prejudice habit”
% Men and Women, AAMC, 2007

Percent

0% 20% 40% 60% 80% 100%

Med Students 49
Residents 43
Assoc Prof 39
Assoc Prof 28
Prof 17
Chair 14
Dean 12

51
57
61
72
83
86
88
Departmental Goals

• To strive for a just and egalitarian meritocracy that rewards faculty equitably
• To recruit and retain an excellent and diverse faculty
• To ensure that all faculty members have equal opportunity to advance
Consistent story in field and experimental studies over several decades –

- Women and the work performed by women receive lower evaluations than men and the work performed by men – even if the work is identical – multiple studies: e.g. Heilman, 2004; Wenneras and Wold, 1997; Steinpreis, 1999
- Sex of the evaluator makes no difference – i.e. both men and women give women lower evaluations – nearly universal
- Women are particularly disadvantaged at evaluation points advancing to high authority positions, especially elite leadership positions – multiple studies; e.g. Sczesny et al., 2006
- Women, but not men, who self-promote receive lower evaluations – Several studies; e.g. Rudman, 1998
- Those who think they have no biases provide the most biased evaluations – Uhlmann and Cohen, 2005

We all have gender biases (conscious or unconscious) that would be predicted to disadvantage departments in recruitment and advancement of women
Prescriptive Gender Norms

DESCRIPTIVE: How men and women actually behave
PRESCRIPTIVE: Assumptions about the way men and women in the abstract “ought” to behave:

- Women: Nurturing, nice, supportive, helpful, sympathetic, dependent = Communal
- Men: Decisive, inventive, strong, forceful, independent, willing to take risks = Agentic

RELEVANT POINTS:
- Leaders, scientists, professors: Decisive, inventive, strong, independent
- Social penalties for violating prescriptive gender assumptions
- Implicit gender biases are easily and automatically activated and once activated readily applied
Evaluation of Leadership/Competence

• Students seated around a table – Who is the leader?

Porter & Geis 1981
FEMALE

F2  F3  F4
F1  F4  F5
F3  F5  F1

X^2 = 35.36, p < 0.001
$X^2 = 39.45, p < 0.001$

$X^2 = 31.50, p < 0.001$
How might these implicit biases affect evaluation?

- Letters of recommendation
- Manuscript reviews
- Receiving scientific awards
Letters of Recommendation

• 312 letters of rec for medical faculty hired at large U.S. medical school
• Letters for women vs men:
  – Shorter
  – 15% vs 6% of minimal assurance
  – 10% vs 5% with gender terms (e.g. “intelligent young lady”; “insightful woman”)
  – 24% vs 12% doubt raisers
  – Stereotypic adjectives: “Compassionate”, “related well…” vs “successful”, “accomplished”
  – 34% vs 23% grindstone adjectives
  – Fewer standout adjectives ("outstanding” “excellent”)

Trix and Psenka, Discourse & Soc 14:191 2003
How might these implicit biases affect evaluation?

• Letters of recommendation
• Manuscript reviews
• Receiving scientific awards
Double-blind review increases %women-authored publications

- Behavioral Ecology (BE) – initiated double-blind review in 2001
- Online data base 1997-2000 vs 2002-2005
  - Gender of 1st author by author name: F, M, UKN
- 1st-authored pubs
  - Women ↑ 8% (3x the increase in F PhDs)
  - Men ↓ 8%
- Behavioral Ecology and Sociobiology (BSE) – similar
  - No change
- 4 journals in ecology with comparable impact factor with single-blind review – no change

Budden et al., TRENDS in Ecol and Evol 23:4, 2007
How might these implicit biases affect evaluation?

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- Manuscript reviews
- Receiving scientific awards
Gender Priming: “Priming” an individual with words, pictures, or media images that align with gender stereotypes promotes gender bias in subsequent behavior.
Semantic priming activates unconscious gender stereotypes

- Unrelated exercise: unjumble sentences where actions reflect dependent, aggressive or neutral behaviors; e.g.:
  - P alone cannot manage a
  - M at shouts others of
  - R read book by the

- “Reading comprehension” experiment with Donna or Donald engaging in dependent or aggressive behaviors

- Rated target on series of traits (Likert, 1-10)

• Gender of evaluator made no difference
• Gender of target determined influence of semantic priming:
  – **Neutral primes** – Donna and Donald same
  – **Dependent primes** – only Donna more dependent
  – **Aggressive primes** – only Donald more aggressive

NIH Director’s Pioneer Awards

• All 9 went to men in the first round (2004)
• In subsequent rounds, women received:
  – 2005 = 43%
  – 2006 = 31%
  – 2007 = 33%
  – 2008 = 25%

Were women doing better science after 2004?
<table>
<thead>
<tr>
<th>2004</th>
<th>≥ 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Characteristics of target scientist and research</strong></td>
<td><strong>Emphasis on risk removed:</strong></td>
</tr>
<tr>
<td>Risk-taking emphasized:</td>
<td>• “pioneering approaches”</td>
</tr>
<tr>
<td>• “exceptional minds willing and able to explore ideas that were</td>
<td>• “potential to produce an unusually high impact”</td>
</tr>
<tr>
<td>considered risky”</td>
<td>• “ideas that have the potential for high impact”</td>
</tr>
<tr>
<td>• “take…risks”</td>
<td>• “highly innovative”</td>
</tr>
<tr>
<td>• “aggressive risk-taking”</td>
<td>• URL no longer includes “risk”</td>
</tr>
<tr>
<td>• “high risk/high impact research”</td>
<td></td>
</tr>
<tr>
<td>• “take intellectual risks”</td>
<td></td>
</tr>
<tr>
<td>• URL includes “highrisk”</td>
<td></td>
</tr>
<tr>
<td><strong>Description of recommendations from outside consultants</strong></td>
<td></td>
</tr>
<tr>
<td>Technological advances highlighted as desirable:</td>
<td>Mention of technological breakthroughs removed; human health added:</td>
</tr>
<tr>
<td>• “support the people and projects that will produce tomorrow’s</td>
<td>• “encourage highly innovative biomedical research with great potential to lead to significant advances in human health.”</td>
</tr>
<tr>
<td>conceptual and technological breakthroughs”</td>
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Semantic priming and tenure criteria?

• 25 top research academic medical centers
• Tenure criteria from websites
• Scanned for “Leader”
• Also scanned for other Bem Sex Role Inventory male, female, neutral words
• Slopes of regressions for annual % faculty tenured women x 7 years
• “Leader” = OR 6.0 (1.02, 35.37) for slope below median compared to those without

Marchant, Bhattacharya, Carnes. J Woman’s Health, 2007
Principles of adult education

Teach faculty how to run effective searches

Active learning

Tenets favoring diffusion of innovation and institutional change

Introduce research on biases and assumptions

Present evidence-based strategies

UW-Madison WISELI: Searching for Excellence and Diversity – Workshops for faculty search committees
Five elements of a successful search

1. Run an effective and efficient search committee
2. Actively recruit an excellent and diverse pool of candidates
3. Raise awareness of unconscious assumptions and their influence on evaluation of candidates
4. Ensure a fair and thorough review of candidates
5. Develop and implement an effective interview process
## Taking an Evidence-Based Approach: Interventions in at least one randomized, controlled study that mitigate bias in evaluation

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Example of study</th>
</tr>
</thead>
<tbody>
<tr>
<td>At least 25% women in the pool being evaluated</td>
<td>Heilman ME. Organ Behav Hum Perf 1980; 26: 386-395, 1980</td>
</tr>
<tr>
<td>Instruction to try to avoid prejudice in evaluation</td>
<td>Blair IV, Banaji MR. J Pers Soc Psychol 70:1142-1163, 1996</td>
</tr>
<tr>
<td>Establishing the value of credentials before any applicant is seen to avoid</td>
<td>Uhlmann and Cohen, Amer Psychol Assoc 16:474-480, 2005</td>
</tr>
<tr>
<td>“redefining” merit</td>
<td></td>
</tr>
<tr>
<td>whenever possible</td>
<td></td>
</tr>
</tbody>
</table>
Percent Female, New Tenure-Track Faculty
Biological & Physical Sciences

<table>
<thead>
<tr>
<th>Participating Departments 2005</th>
<th>Non-Participating Departments 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>21/84</td>
<td>33/89</td>
</tr>
<tr>
<td>17/49</td>
<td>6/20</td>
</tr>
</tbody>
</table>

2003-2005

2006
New Hires' Satisfaction* With the Hiring Process
Biological & Physical Sciences

* Agree Strongly to the item "I was satisfied with the hiring process overall."

Participating Departments

Non-Participating Departments
Effect of Hiring Workshop Participation on Department Climate

"The Climate for Women in My Department is Good"

"The Climate for Faculty of Color in My Department is Good"

% Agree or Strongly Agree

<table>
<thead>
<tr>
<th></th>
<th>2003</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hiring</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>N = 68</td>
<td>N = 758</td>
</tr>
</tbody>
</table>

*P = .05
Percent Women Faculty, by Division University of Wisconsin-Madison

Percent Women Faculty, 2000-2007:
- Physical Sciences:
  - 2000: 6.0%
  - 2001: 7.0%
  - 2002: 8.0%
  - 2003: 9.0%
  - 2004: 10.0%
  - 2005: 11.0%
  - 2006: 12.0%
  - 2007: 13.0%

- Biological Sciences:
  - 2000: 18.0%
  - 2001: 19.0%
  - 2002: 20.0%
  - 2003: 21.0%
  - 2004: 22.0%
  - 2005: 23.0%
  - 2006: 24.0%
  - 2007: 25.0%
Women as Percentage of Named Professorship Recipients

<table>
<thead>
<tr>
<th>Year</th>
<th>% Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>10%</td>
</tr>
<tr>
<td>2001</td>
<td>15%</td>
</tr>
<tr>
<td>2002</td>
<td>20%</td>
</tr>
<tr>
<td>2003</td>
<td>25%</td>
</tr>
<tr>
<td>2004</td>
<td>30%</td>
</tr>
<tr>
<td>2005</td>
<td>35%</td>
</tr>
<tr>
<td>2006</td>
<td>40%</td>
</tr>
<tr>
<td>2007</td>
<td>45%</td>
</tr>
</tbody>
</table>
% Women Department Chairs
Biological & Physical Sciences
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 bad habits that we all have
Behavioral Change

- **Motivation** – person has to *want* to change
- **Self-efficacy** – person must have self-perceived ability to act in new way
- **Positive outcome expectations** – person must believe that his/her new actions will result in desired outcome
- **Deliberate practice**
Promote Self-Efficacy for Reducing Gender Biased Habits

Six Strategies for Self-Regulation of Gender Biased Behavior
Strategy that does not work

- **Stereotype Suppression** e.g. Monteith et al., 1998; Galinsky & Moskowitz, 2000
  - Banish stereotypes from one’s mind (i.e. gender or race “blind”)
  - Rebound effects
1. Personal Stereotype Replacement

- Recognize the stereotype
  - *e.g. Women faculty less interested in leadership opportunities*

- Label it
  - *e.g. Prescriptive gender norms*

- Identify precipitating factors
  - *e.g. Priming with gender congruent information*

- Replace with non-stereotypic response
  - *e.g. I know many successful women leaders*
  - *e.g. I know that training and experience rather than sex are the main determinants of leader competence*
2. Societal Stereotype Replacement

✓ Recognize the stereotype in society
  • *e.g. Portrayal of girls as poor at math or men as unable to do housework*

✓ Label the characterization as stereotypical
  • *e.g. Prescriptive gender norms*

✓ Challenge the fairness of the portrayal and replace with an egalitarian portrayal
  • *e.g. Research does not support a difference in math performance once the number of math courses taken are controlled for*
3. Counter-stereotype Imaging

✓ Recognize stereotypic response
✓ Label the cognitive processes at work
  • e.g. *Violation of prescriptive gender norms for women leaders; redefining merit*
✓ Help regulate response by imagining a counter-stereotype woman in detail
  • e.g. *Imagine an astronaut, engineer, CEO who is also a woman OR specific positive CS individuals you know*
4. Individuating (instead of generalizing)

✓ Avoid making a snap decision based on general impression or sense of “fit”
  • *e.g. Make gender less salient than being a scientist, physician, or program developer*

✓ Obtain more information on specific qualifications, past experiences, etc. before making a decision
  • “I always think of Joe or Henry when these opportunities arise, but an open application process might bring in fresh ideas and involve more women”
5. Perspective-taking

✓ Adopt perspective (in the first person) of a member of the stigmatized group
  
  * e.g. Imagine what it would be like to
    
    - Have your abilities called into question
    - Viewed as less committed to your career than colleagues with similar training and effort
    - Forced to ward off unwanted sexual advances at professional meetings
6. Increasing Opportunities for Contact

✓ Seek out opportunities for greater interaction with high authority women, women of color, and women with disabilities

  • e.g. Meet with women in high authority positions to discuss research, ideas, visions
  • e.g. In compiling membership for key committees or speakers lists ensure that women (from diverse groups) are represented
Personal Bias Reduction Strategies

- Personal Stereotype Replacement
- Societal Replacement of Stereotypes
- Counter-stereotypic Imaging
- Individuating
- Perspective-taking
- Increase Opportunities for Contact

As in changing any habitual behavior, practice, practice, practice…..
Conclusion/Summary

• Implicit assumptions about gender lead to cognitive distortions that impede departments in achieving their egalitarian goals

• The subtlety of these distortions allows gender bias against women to enter decision-making processes without being overt

• Individuals and institutions can break the prejudice habit to overcome implicit biases with
  – awareness
  – motivation
  – self-efficacy (use of 6 strategies)
  – positive outcome expectations
  – practice
Questions?