

Gender Bias in Academic Medicine: Pitfalls, Promise and Progress

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Objectives for today

- Review some of the issues
- Introduce some key constructs from social psychology that account for the tenacity of gender bias
- Apply constructs to a representative case
- Review some effective interventions to reduce the application of gender bias

What we believed...

- That the lack of women leaders in any field would fix itself when the pipeline was full
- That if women just behaved like men, they would succeed at the same rate
- That the workplace was a meritocracy where women's and men's accomplishments would be viewed and rewarded equally

What we now know...

- That unconscious gender-based assumptions and stereotypes are deeply embedded in the patterns of thinking of both men and women
- That women and work performed by women consistently receive lower evaluations than men and work performed by men (by both men and women evaluators)
- That these cumulative disadvantages impede women's progress toward leadership

Tremendous gains in medicine

- In 2007-08, women comprised:
 - 49% of medical students
 - 45% residents & fellows
 - AMCs
 - 34% faculty
 - 12% chairs
 - 10% deans
 - 25% NIH R01 applicants and recipients

Gender issues remain in medicine

- Research = pathway to leadership in academic medicine
 - Women are more likely to be clinicians and educators
Tesch et al., JAMA, 1995; Wright et al., Acad Med, 2003
 - Women more likely to be assigned “institutional housekeeping”
Bird & Wang, NSWA, 2004
- Gender-based and frank sexual harassment remain prevalent
Shiffman et al., JAMWA, 1995; Frank et al., Arch Intern Med, 1998, Witte et al., Acad Med, 2006
- Women physicians earn less with comparable productivity
Wright et al, Acad Med, 2003; Ash et al., Acad Med, 2002
- “Climate” less supportive of women’s careers
Foster et al., Acad Med, 2000; Carr et al., JWH, 2003

Constructs:

1. Social Categories
2. Expectancy Bias

Gender is a Social Category

- Sex is biological (xx = female; xy = male);
 - Gender is socially constructed
 - Social categorization
 - People assigned to groups based on common attribute
 - Stereotyping can emerge if most members share certain characteristics
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- Biology irrelevant to most professional roles occupied by men and women
 - Men and women continue to have different *social roles* outside the workplace
 - These social roles can influence gendered reactions and interactions in the workplace

Expectancy Bias:

Expecting a certain behavior or characteristic based on assumptions about a *social category*

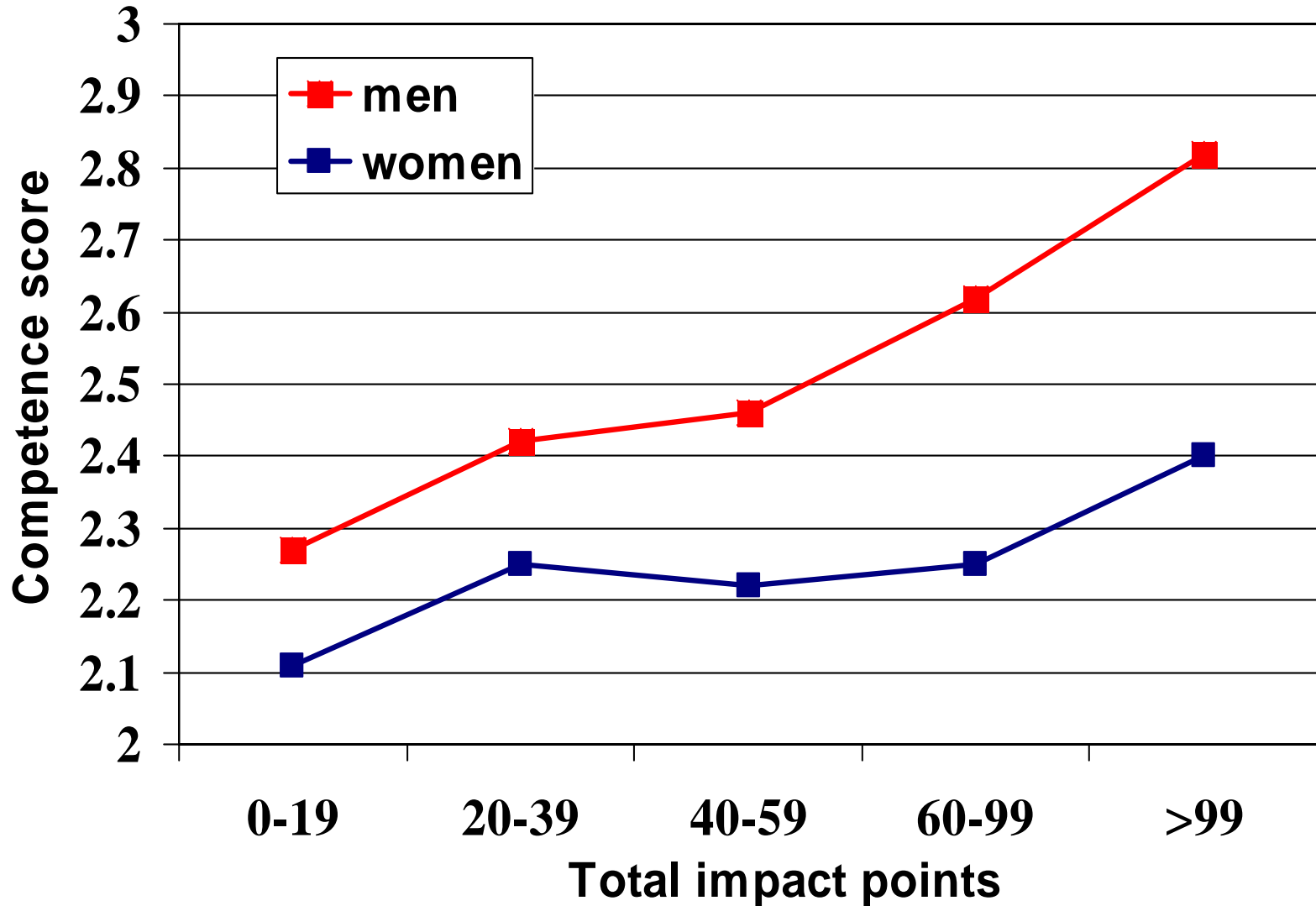
- Wisconsinite = likes cheese
 - Cardiologist = male
 - Nurse = female
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Expectancy bias can distort our assessment of individuals who are members of the stereotyped group

Expectation that men are better scientists than women biases evaluation

- 114 applications for prestigious research postdocs to Swedish MRC (52 women)
- Reviewers' scores vs standardized metric from publication record = impact points
- Women consistently reviewed lower, especially in “competence”
- Women had to be 2.5x as productive as men to get the same score
- To even the score, women needed equivalent of 3 extra papers in a prestigious journal like Science or Nature

Wenneras and Wold, Nature, 1997



Expectancy Bias = Academic work done by men better than work done by women

- Curriculum vitae sent to 238 academic psychologists (118 male, 120 female)
- Randomly assigned male or female name to cv
- Academic psychologists gave cv's with male names attached higher evaluations for
 - Teaching
 - Research
 - Service Experience
- More comments on cvs with female name
- Evaluators were more likely to hire the male than the female applicant

Construct:
Prescriptive Gender Norms

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, cardiologists: Decisive, inventive, strong, independent
- Social penalties for violating prescriptive gender assumptions
- Unconscious gender stereotypes are easily and automatically activated and once activated readily applied

Construct:

Role Congruity for men and
Role Incongruity for women in
high authority positions

Penalties for success: Reactions to women who succeed at male gender-typed tasks

Heilman et al., *J Applied Psychol* 89:416-27, 2004

- 48 participants (20 men)
- Job description; Assist VP; products made suggested male (e.g. engine parts, fuel tanks). Male and female rated in two conditions:
 - Performance ambiguous
 - Performance clear

Competence Score:

Competent - incompetent

Productive - unproductive

Effective - ineffective

Achievement-related Characteristics:

Unambitious - ambitious

Passive - active

Indecisive - decisive

Weak - strong

Gentle - tough

Timid - bold

Unassertive - assertive

Likeability:

Likeable - not likeable

How much do you think
you would like to work
with this person?

Very much - not at all

Interpersonal Hostility:

Abrasive - not abrasive

Conniving - not conniving

Manipulative - not manipulative

Not trustworthy - trustworthy

Selfish - not selfish

Pushy - accommodating

Comparative Judgment:

Who is more likeable?

Who is more competent?

Results

Performance ambiguous

- Likeability and hostility comparable
- Men more competent
- Men more achievement-related characteristics

Congruity of roles for men and
incongruity for women

Performance clear

- Competence comparable
- Achievement-related characteristics comparable
- Women less liked
- Women more hostile

Penalty for gender role violation

Why Are Women Penalized for Success at Male Tasks?:

The Implied Communality Deficit

Heilman & Okimoto J Appl Psychol 92:81-92, 2007

- Similar design – evaluating VP’s in male-gendered position
- Memo from CEO introducing each VP; sentence varied in last paragraph:
 - Communal (“caring and sensitive” to employees; encourages “cooperation and helpful behavior”)
 - Positive non-communal (“worked hard to maximize employees’ contributions”)

Results

- No effect of participant sex
- Positive non-communal or no information:
 - Women vs men
 - Less likable
 - More hostile
 - Less desirable as boss
- Communal information
 - Men - no effect
 - Women vs men
 - More likable
 - Comparable hostility and boss desirability

**Construct:
Redefining Merit to Justify
Discrimination**

Redefining Merit to Justify Discrimination:

Adjusting the value of specific credentials that a candidate of the desired gender happens to have

Constructed Criteria:

Redefining Merit to Justify Discrimination

Uhlmann and Cohen, *Psychol Sci*, 16: 474-480, 2005

- Mock hiring situation – 3 studies
- Male and female applicants with identical credentials
- Police Chief – criteria constructed to favor male applicant
- Women's Studies Professor – criteria constructed to favor female applicant
- Self-perceived objectivity predicted gender bias

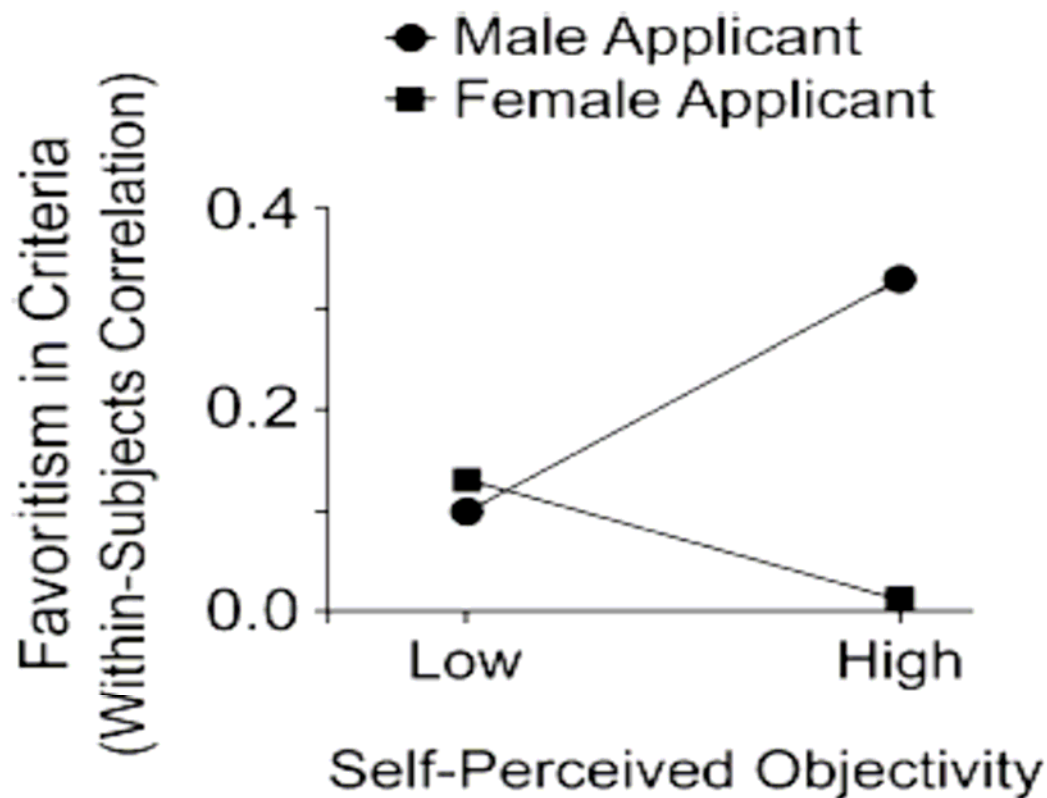


Fig. 2. Results from Experiment 1: the interaction of applicant's gender and self-perceived objectivity in predicting biased criteria. Low self-perceived objectivity is defined as one standard deviation below the mean; high self-perceived objectivity is defined as one standard deviation above the mean. Higher numbers indicate greater favoritism toward the applicant.

Study 3 -

- Half of the evaluators rated importance of criteria *before* seeing applications (commitment vs no-commitment)
- No-commitment: Criteria constructed to favor male applicant
- Commitment: Male and female applicants – similar hiring evaluations

Uhlmann and Cohen, Psychol Sci, 16: 474-480, 2005

Construct:
Shifting Standards of Reference

Shifting Standards of Reference:

Occurs when reliance on a group trait or stereotype leads to evaluation using a different referent standard

(e.g., strong, for a woman; sensitive, for a man)

Shifting Standards of Reference cause cognitive distortions in judgment

- Height of men overestimated and women underestimated despite standard reference
Nelson, Biernat, Manis, J Pers Soc Psychol 25: 356-71, 1990
- Woman judged *lower* than men on actual wages but *higher* in financial success
Biernat, et al., J Pers Soc Psych 60:485, 1991
- Women applicants as likely to be shortlisted but less likely to be hired for male gender-typed job
Biernat & Fuegen, J Soc Issues 57:707-724, 2001

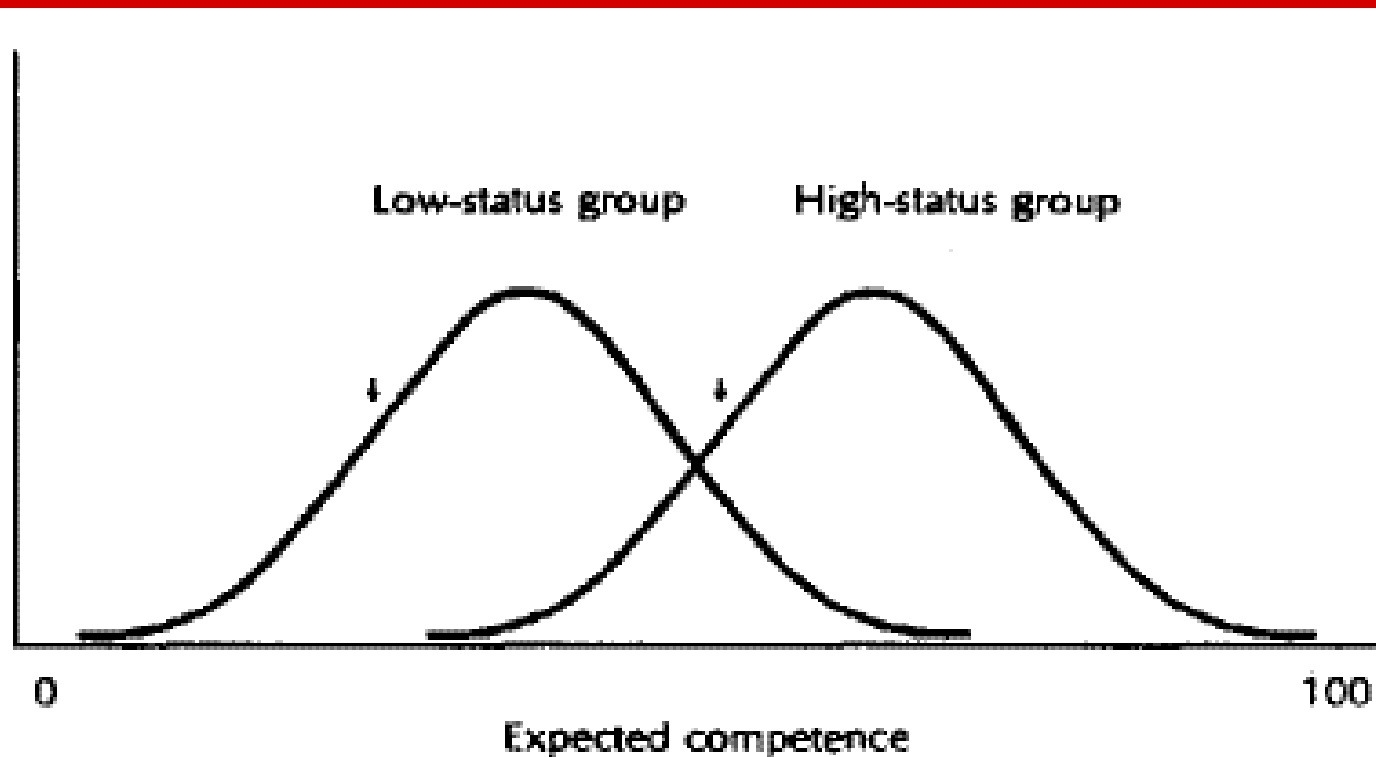


Figure 1. Schematic depiction of stereotyped representation of competence and minimum-standard levels for low- and high-status groups.

Constructs:

1. Gender Priming
2. Stereotype Threat

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- **Gender Priming**: “Priming” an individual with words, pictures, or media images that align with gender stereotypes promotes gender bias in subsequent behavior
 - **Stereotype Threat**: A member of a social category about which a negative stereotype exists can underperform relative to his/her ability if being a member of the stigmatized group is made salient
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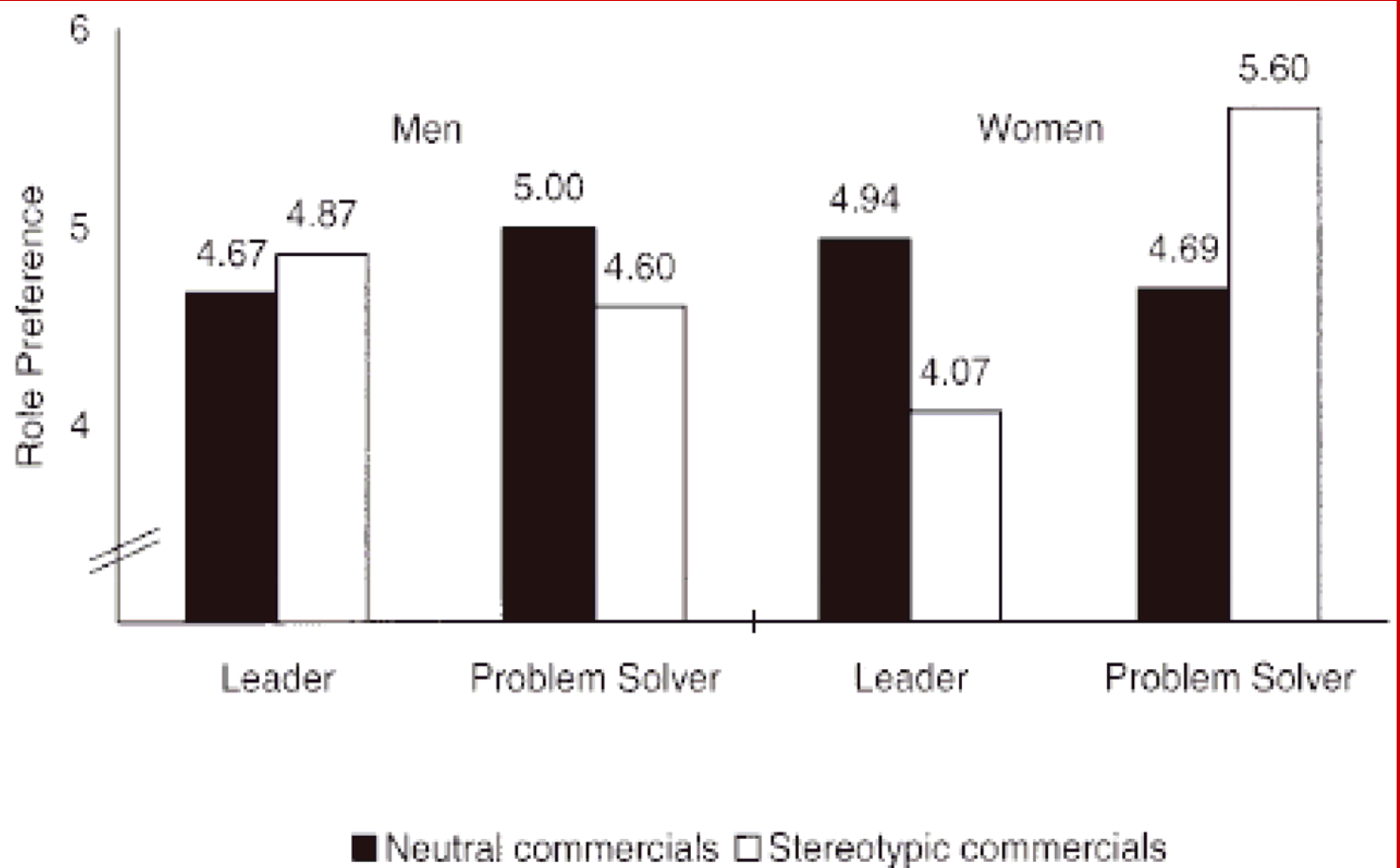
Clearing the Air: Identity Safety Moderates the Effects of Stereotype Threat on women's Leadership Aspirations

Davies, Spencer & Steele, *J Pers Soc Psych* 88:276-287, 2005

- 61 Ss (30 M, 31 F)
- Gender Priming = viewed commercials that reinforced female gender stereotypes or neutral
- Stereotype Threat = women are less able to lead
- Asked to select role as “leader” or “problem-solver” in a subsequent group task

Results

- Men in all conditions and women after neutral commercials
 - No clear role preference
- Women after gender priming
 - Strong preference for problem-solver rather than leader



Study 2 –

Was it stereotype threat?

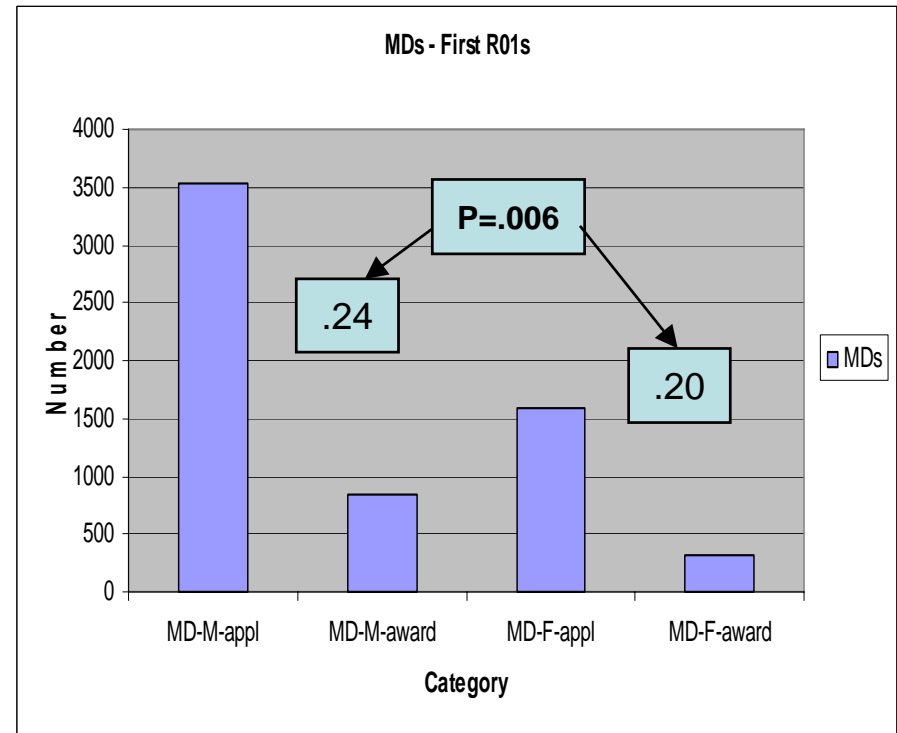
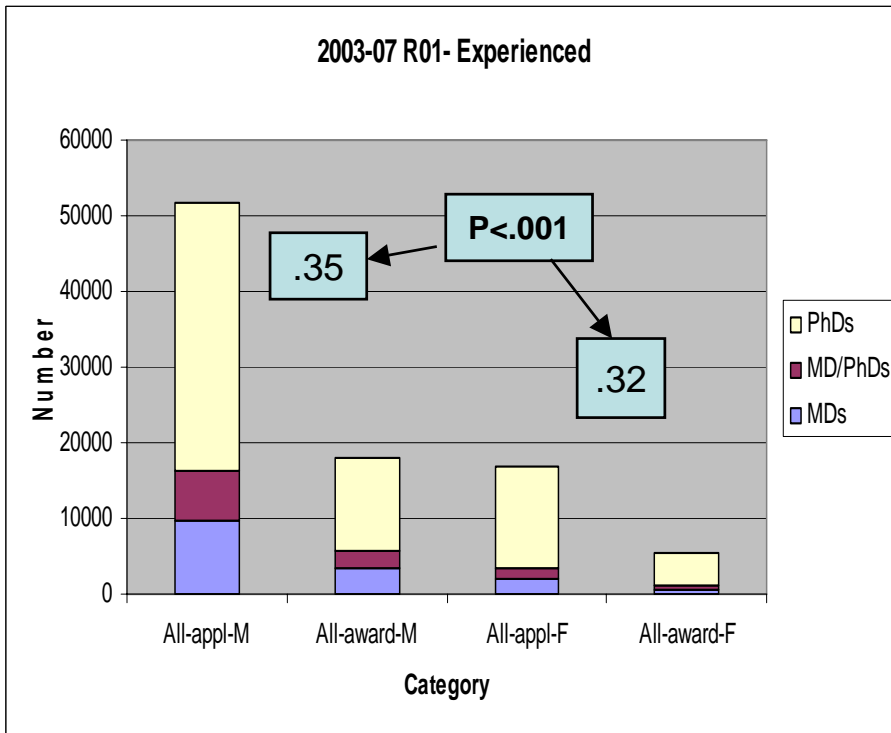
Impact of counteracting the threat?

- 116 Ss (58 F, 58 M), similar design
- After viewing commercials
 - Response time to words on computer screen = female stereotype, neutral, nonwords
 - Randomized to read that *research shows no gender differences in performance of either task*

Results

- Women with female-stereotype priming:
 - Female stereotype activated (shorter time to identify female-stereotype adjectives)
 - Less preference for leader; greater preference for problem solver role (same as Study 1)
 - Level of stereotype activation predicted level of leadership aspiration
- Affirming sentence eliminated stereotype threat for leader selection

Gender difference in NIH Award rates, 2003-07





MALE

NIH R01

- High prestige
- Scientific leadership
- Keen competition for scarce resources with high status

Agentic



NIH K23

- Mentored (usually by senior male)
- Lower status than reviewers
- Lower budget
- Less competitive

Communal



FEMALE



Study Section

Case Study – Dr. Leroy

The Cardiovascular Research Super Science (CISS) issued a program for the second year in a row seeking grant proposals for high risk research

“willing to take risks” strongly associated with male. Bem, 1974

Ambiguous performance criteria favors men. Heilman, 2001, 2004

Shifting standards; women short-listed but not hired. Biernat & Fuegen, 2001

One criterion for review is whether applicants have potential for scientific leadership. This prestigious, 2 million dollar grant goes to a single recipient.

Mental model of leadership strongly male. E.g. Sczesny et al., 2006

Role congruity for men – high prestige, big budget. Eagly & Karau, 2002

Case Study – Dr. Leroy

Assistant Professor Dorinne Leroy was a finalist for this award and was interdisciplinary, science fields. Her work is and biological science fields. A hall of the administrative building to her interview, she passed 15 portraits of previous senior CISS scientists, all of whom were white males.

Potential for gender stereotype priming: scientists are men; women are in support roles. Banaji et al. 1993

A female staff assistant greeted her in the room with 5 men and 1 woman. Although the interview was pleasant, she felt unduly nervous and did not think she performed at her best.

Activation of stereotype threat: women are not as good as men at science or leadership. Davies, et al. 2005

Case Study – Dr. Leroy

Reconstructing merit to justify discrimination. Uhlmann & Cohen, 2005

Dr. Leroy received the award later indicating that she had not been selected for the award. The letter indicated that her research was deemed too broad and she was a little too early in her career.

Dr. Leroy was somewhat surprised by this because the award was given to Dr. Jason at Tus University, a scientist whose research was broad and interdisciplinary – even more so than Dr. Leroy's.

Women scientists 2.5X more productive for same competency rating. Wenneras & Wold, 1997

Case Study – Dr. Leroy

The award this year went to Dr. Richard Dare, a colleague of Dr. Leroy's. Dr. Dare's narrow area in molecular electrophysiology. Dr. Dare's research in fellows to Dr. Leroy for Cardiovascular Research and their career benchmarks have largely been parallel – faculty appointments in the same year at comparably ranked major research universities, successful R01 proposals from NHLBI in the same year, and similar publication rates in journals of comparable impact.

Her success may imply communality deficit and unlikability. Heilman, 2004

Accomplishments of academic psychologists rated lower if performed by a woman. Steinpreis et al., 1999

Breaking the Prejudice Habit

Institutional

- Evaluation processes that allow individuation
- Increase presence of women in key decision-making
- Promote *Bias Literacy*

Self-regulation

- Recognize, label and replace stereotype (personal and societal)
- Counter-stereotype imaging
- Perspective-taking
- Increase exposure

Conclusion/Summary

- Gender as a social category leads to expectancy biases that causes cognitive distortions that disadvantage women in career advancement in academic medicine
- The subtlety of these distortions allows gender bias against women to enter decision-making processes without being overt
- Individuals and institutions must be committed to “breaking the prejudice habit” to overcome implicit biases to achieve our explicit egalitarian goals

Questions?