

Factors Contributing to and Influencing the Current State

Penn State Hershey Summit
May 14, 2009

Molly Carnes, MD, MS
University of Wisconsin-Madison

Topics to Cover

- Constructs from social psychology
- How these might play out in real examples
- Interventions to mitigate application of bias
- Strategies to self-regulate gender bias

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
-
- 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*

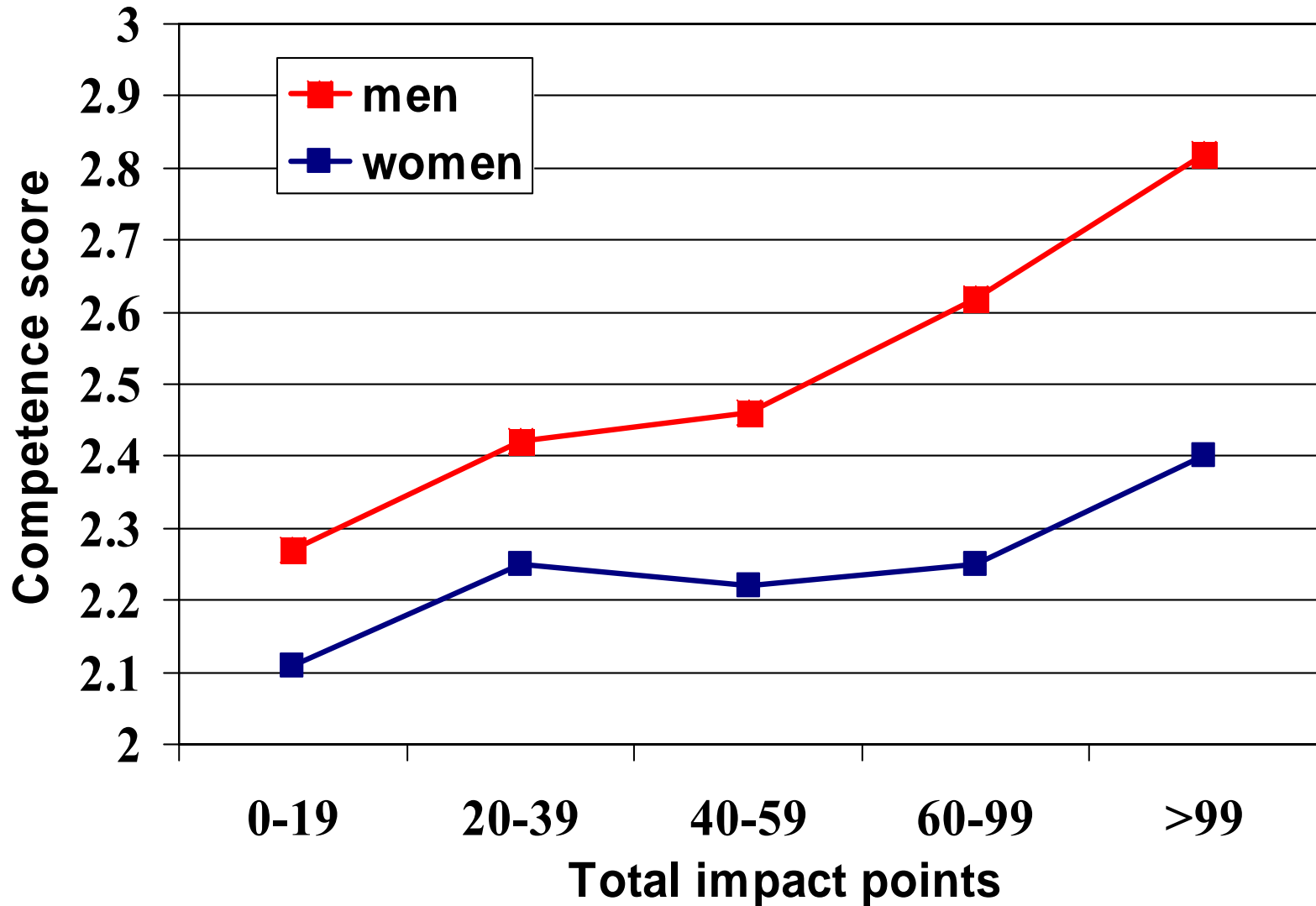
- Wisconsinite = cheesehead
 - Surgeon = male
 - Nurse = female
-

Expectancy bias can distort our assessment of individuals who are members of the stereotyped group

Expectation Bias = Scientists are men

- 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 = Faculty are men

- 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, doctors: 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

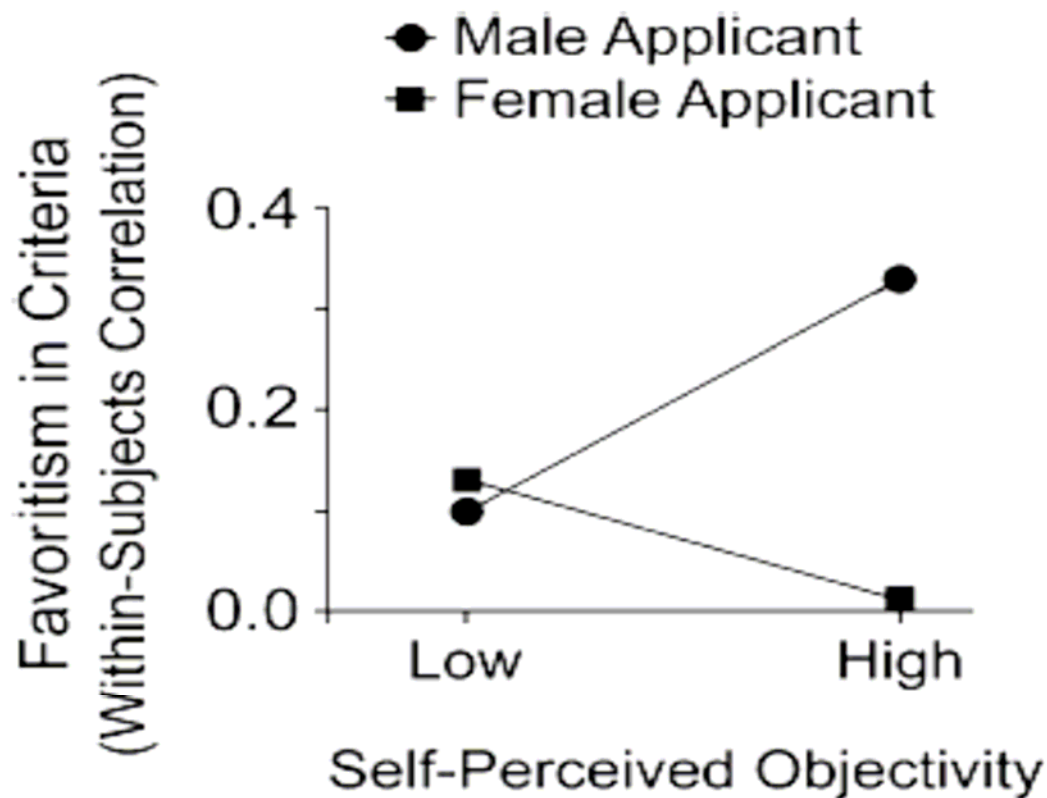


Fig. 2. Results from Experiment 1: the interaction of applicant's gender and self-perceived objectivity in predicting biased criteria. Low self-perceived objectivity is defined as one standard deviation below the mean; high self-perceived objectivity is defined as one standard deviation above the mean.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

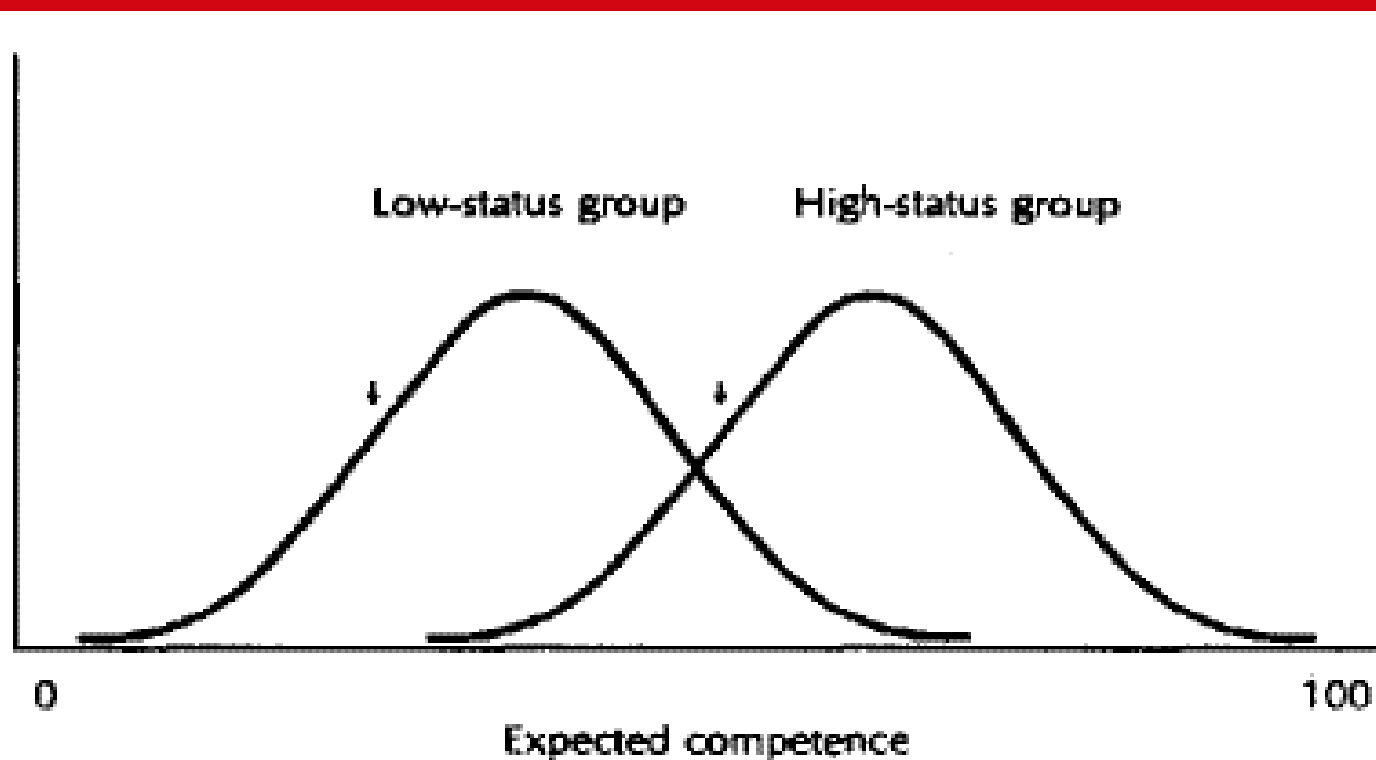


Figure 1. Schematic depiction of stereotyped representation of competence and minimum-standard levels for low- and high-status groups.

Constructs:

1. Gender Priming
2. Stereotype Threat

-
- **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
-

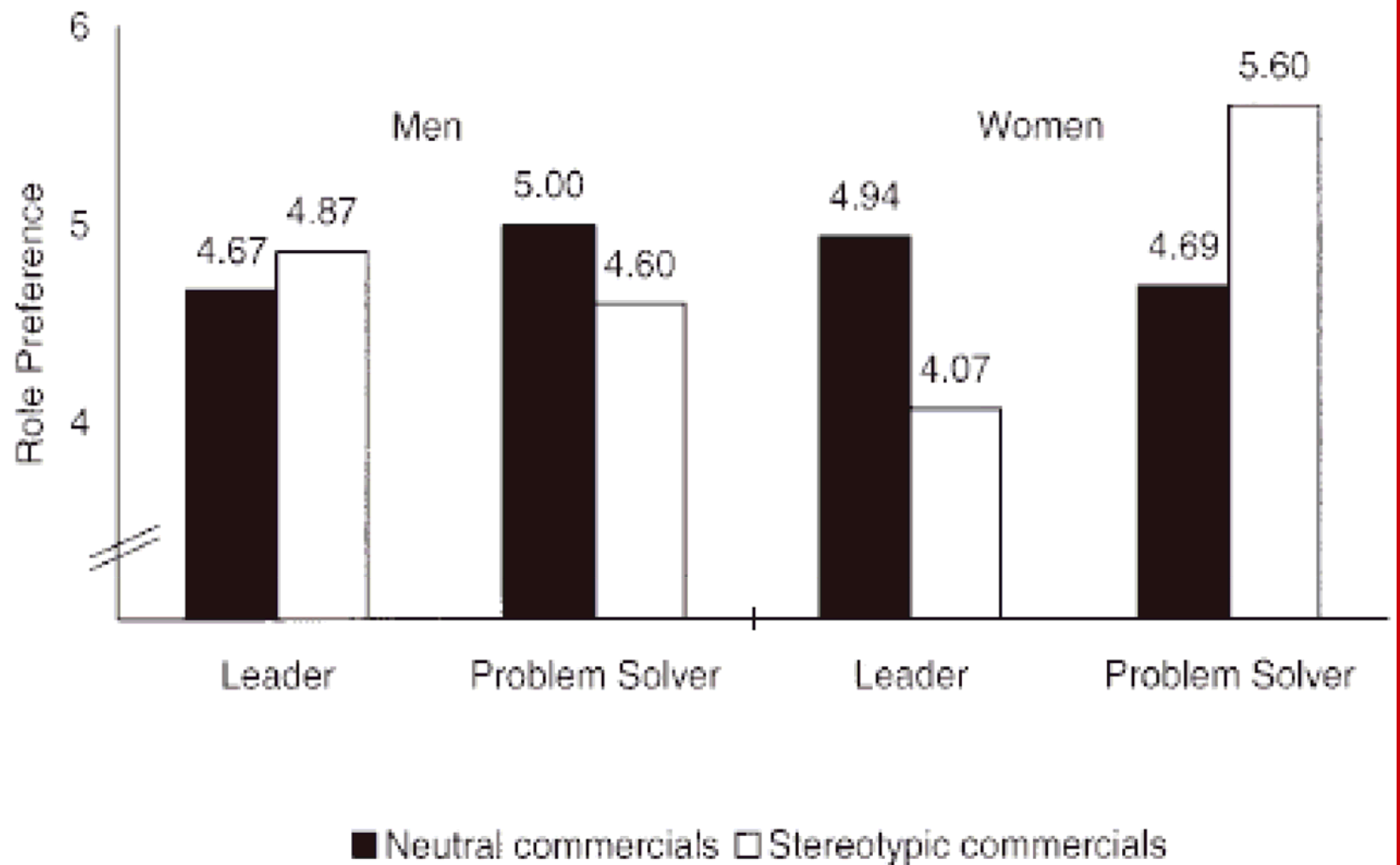
Clearing the Air: Identity Safety Moderates the Effects of Stereotype Threat on women's Leadership Aspirations

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?

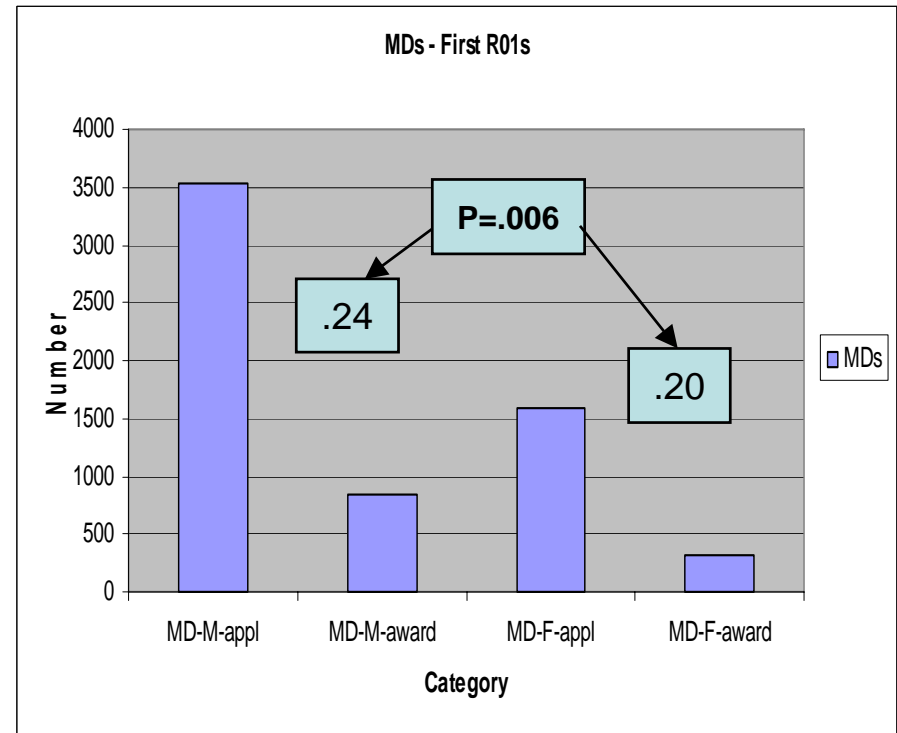
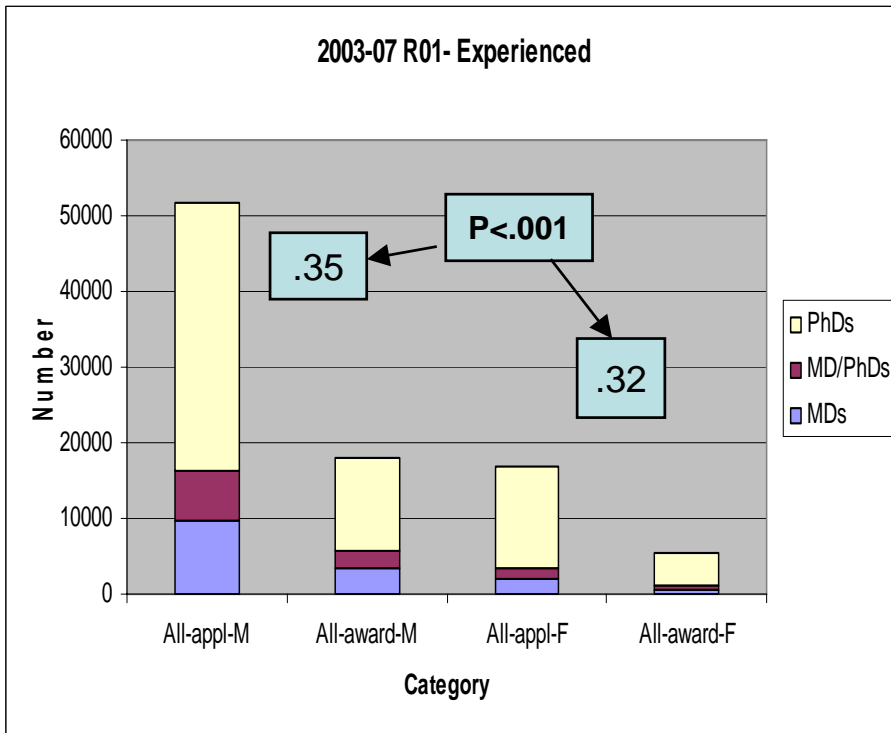
Impact of counteracting the threat?

- 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

- Role congruity for men
- Implied communality deficit for clearly competent agentic women

NIH K23

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

Communal

- Status differential replicates societal gender roles



FEMALE



Study Section

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?

2004

≥ 2005

Characteristics of target scientist and research

Risk-taking emphasized:

- “exceptional minds willing and able to explore ideas that were considered risky”
- “take...risks”
- “aggressive risk-taking”
- “high risk/high impact research”
- “take intellectual risks”
- URL includes “highrisk”

Emphasis on risk removed:

- “pioneering approaches”
- “potential to produce an unusually high impact”
- “ideas that have the potential for high impact”
- “highly innovative”
- URL no longer includes “risk”

Description of recommendations from outside consultants

Technological advances highlighted as desirable:

- “support the people and projects that will produce tomorrow’s conceptual and technological breakthroughs”

Mention of technological breakthroughs removed; human health added:

- “encourage highly innovative biomedical research with great potential to lead to significant advances in human health.”

Evidence-Based Strategies – For women in male sex-typed roles

- Narrow range of behavior for women
 - Too stereotypically feminine = triggers assumptions of incompetence, dependence
 - Too stereotypically masculine = penalties for gender role violation
- Agentic but communal = powerful combination
- Individuate whenever possible

Evidence-Based Strategies – For institutions committed to gender equity

- Reaffirm that *“research shows there is no gender difference in the performance of...”*
- Evaluation processes that allow individuation
- Remove sources of information that lead to stereotype threat (e.g. picture gallery of white men)
- Examine wording of internal awards for gender priming favoring male applicants
- Establish value of credentials before reviewing applicants

Evidence-Based Strategies – Personal bias-reduction strategies

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

As in changing any habitual behavior,
practice, practice, practice.....

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

Conclusion/Summary

- Women physicians & scientists have made tremendous advances but gender bias causes cognitive distortions that disadvantage women
- The subtlety of these distortions enables bias against women to enter decision-making processes without being overt
- Academic medicine would be well served if we diagnose and treat gender bias with the same reverence for evidence-based decision-making that we demand in our clinical practice and teaching