Factors Contributing to and Influencing the Current State

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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


[Graph showing the relationship between competence score and total impact points for men and women.]

- **X-axis:** Total impact points
- **Y-axis:** Competence score
- **Legend:**
  - Red squares: Men
  - Blue squares: Women
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

Steinpreis et al., Sex Roles 41: 509 1999
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 

- 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
Achievement-related Characteristics:
Unambitious - ambitious
Passive - active
Indecisive - decisive
Weak - strong
Gentle - tough
Timid - bold
Unassertive - assertive

Interpersonal Hostility:
Abrasive - not abrasive
Conniving - not conniving
Manipulative - not manipulative
Not trustworthy - trustworthy
Selfish - not selfish
Pushy - accommodating

Competence Score:
Competent - incompetent
Productive - unproductive
Effective - ineffective

Likeability:
Likeable - not likeable
How much do you think you would like to work with this person?
Very much - not at all

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

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

Penalty for gender role violation

Congruity of roles for men and *incongruity* for women
Why Are Women Penalized for Success at Male Tasks?:
The Implied Communality Deficit

• 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
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

**Constructed Criteria:**
Redefining Merit to Justify Discrimination
Uhlmann and Cohen, Psychol Sci, 16: 474-480, 2005
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
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

• Woman judged lower than men on actual wages but higher in financial success

• Women applicants as likely to be shortlisted but less likely to be hired for male gender-typed job
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

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

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

Davies, Spencer & Steele, J Pers Soc Psych 88:276-287, 2005
Gender difference in NIH Award rates, 2003-07

Ley & Hamilton Science, 2008
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**

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

- Status differential replicates societal gender roles

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