

# Improving the Search Process

Overcoming Unconscious Bias in  
Medical Education

Marjorie Bowman, MD, MPA



# The importance of diversity

- Recruit best candidates
- Increase talent pool from which to recruit
- Enhance creativity and success
- Be fair and equitable



# Gender schemas/ Unconscious bias

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Gender schemas are deeply embedded, gender-based assumptions and stereotypes. They are generalizations about our environment. We know:

- Women and (past) work performed by women typically receive lower evaluations than men and work performed by men (by both men and women evaluators).
- Lower expectations of (future) professional competence bias interpretation of actual performance.



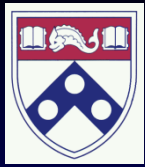
# Conscious bias



Exploring the  
Dangerous  
Trades 1943

In 1919, Dr. Hamilton was offered a position of assistant professor of industrial medicine at Harvard Medical School. She accepted and became the first woman on the staff. She retired from Harvard in 1935. Over her career, she received many honorary degrees and awards, including a listing in *Men of Science* in 1944 and the Lasker Award of the U.S. Public Health Association in 1947.

- ***Upon appointment, Harvard made three requirements: Dr. Hamilton would not be allowed to use the Faculty Club, she would have no access to football tickets and she would not be allowed to march in commencement processions.***
- ***All her students were male, because Harvard did not admit women students until World War II.***
- ***Her final faculty rank was only that of an Assistant Professor Emeritus of Industrial Medicine -- she never received a promotion.***

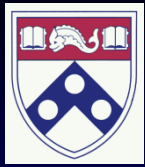


There is a “chronic human preference for familiarity.”

Schaller M, Crandall CS. Individual goals in evolving organizations. *Am Psych* 1999;54:778-788.

Also known as: “The Longing to Clone”

Moody J. *Rising above cognitive errors: Guidelines for search, tenure review, and other evaluation committees.* 2005



# Schemas, cont'd

- Bias is (often) unconscious: stereotypes are activated outside of awareness
- Schemas apply to emotionally neutral categories
  - For example, presented with photos of men and women of identical height, both men and women will identify men as taller and women as shorter



# Bias identified by testing

Banaji, a social psychologist at Harvard, has found the majority of all subjects test as biased against people who are black, gay, elderly, and anti-Arab Muslim. Many people also exhibit bias against their own group: About half of blacks test anti-black; 36 percent of Arab Muslims test anti-Arab Muslim; and 38 percent of gays show an automatic preference for heterosexuals.



# Gender and presumptive behavior

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**DESCRIPTIVE BIAS:** Unconscious assumptions about how men and women DO behave, e.g., assuming women are nurturing but not forceful

**PRESCRIPTIVE BIAS:** Unconscious assumptions about the way men and women OUGHT to behave, e.g., women should be at home rather than in the labor market

**TYPICAL ASSUMPTIONS:**

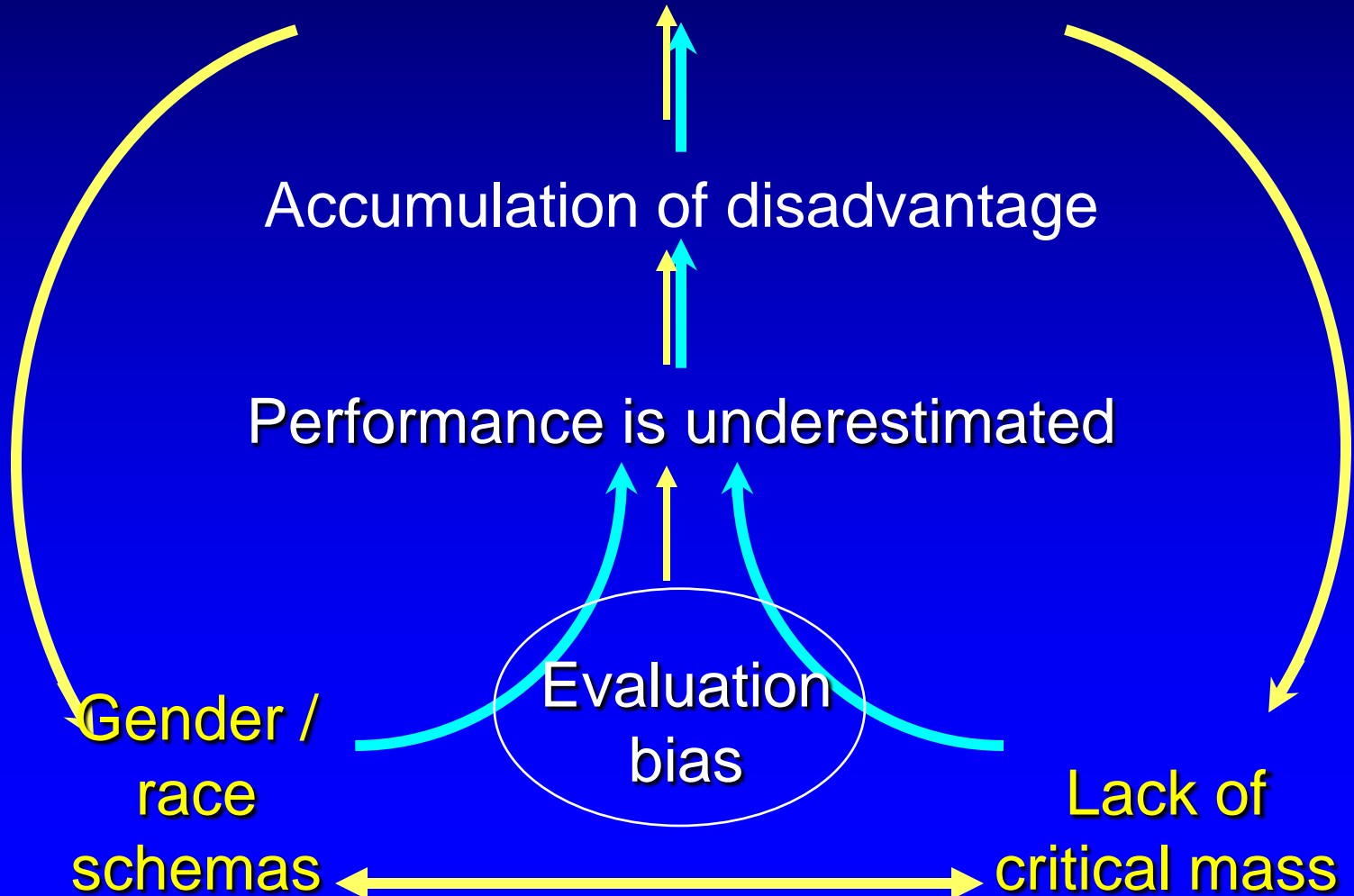
- Women: Communal traits - nurturing, nice, supportive, helpful, sympathetic
- Men: Agentic traits - decisive, inventive, strong, forceful, independent

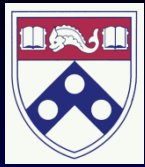


# Self-reinforcing cycle

(from U Mich web site)

**Lowered success rate**





# First year of NIH Pioneer Awards:

Women were:

- 20% of applicants
- 10% of 21 finalists

**BUT**

***-0 of 9 awardees***



# Second year of NIH Pioneer Awards:

Women were:

- 26% of applicants

**AND**

***- 5 of 13 awardees***



“I am still disappointed about the prestigious fellowship competition I later lost to a male contemporary when I was a PhD student, even though the Harvard dean who had read both applications assured me that my application was much stronger (I had published six high-impact papers whereas my male competitor had published only one). Shortly after I changed sex, a faculty member was heard to say “Ben Barres gave a great seminar today, but then his work is much better than his sister’s.””



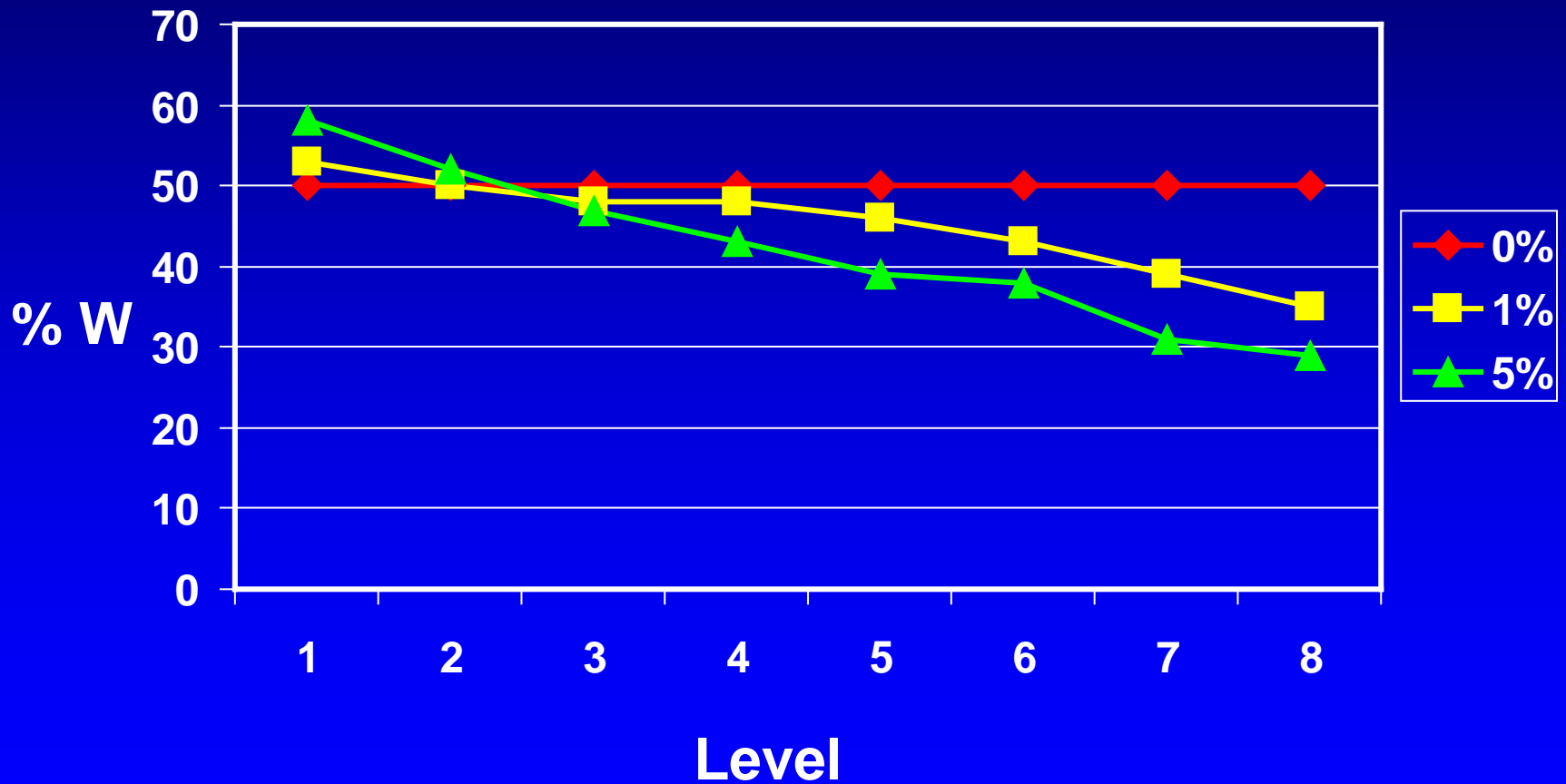
# Computer simulation of cumulative advantage for men in an organization

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- 8 levels: 500 employees at bottom; 10 at top; 50% women
- Evaluation scores normally distributed; highest scores promoted
- 15% attrition until organization staffed with all new employees
- “Bias” points given to favor men:
  - 5% = 29% women at top; 58% bottom
  - 1% = 35% women at top; 53% at bottom



# How trivial bias works against women within organizations





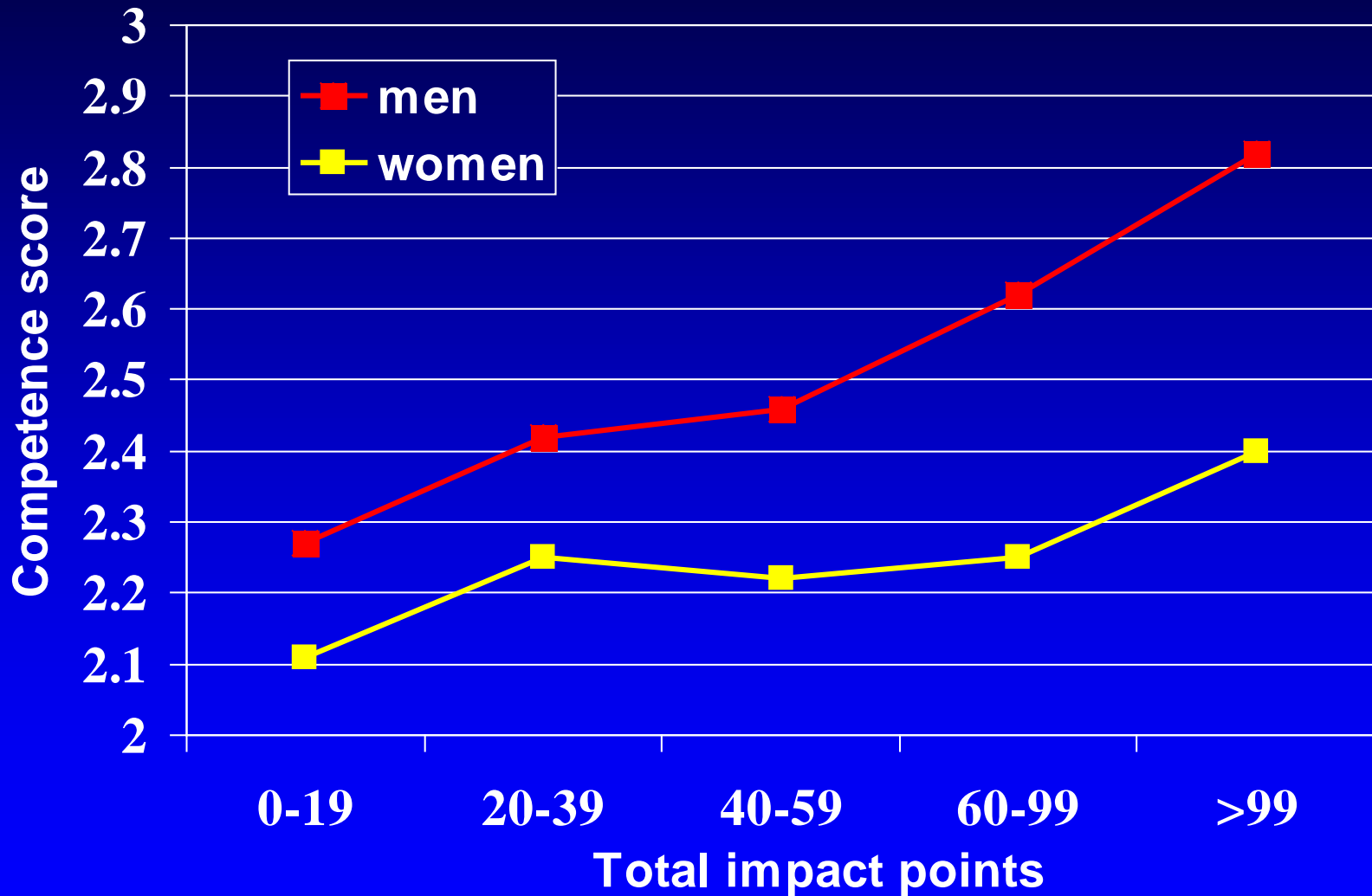
# Swedish Postdoc Study

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- 114 applications for prestigious research postdoctoral positions to Swedish MRC (52 women)
- Reviewers' competence scores compared to standardized metric from publication record (called impact points)
- Women were consistently reviewed lower in "competence."
- Women had to have 2.5x as many impact points as men to get the same competence score: equivalent of 3 extra papers in *Science* or *Nature*



# Swedish Post-Doc Study





“I am suspicious when those who are at an advantage proclaim that a disadvantaged group of people is innately less able.”



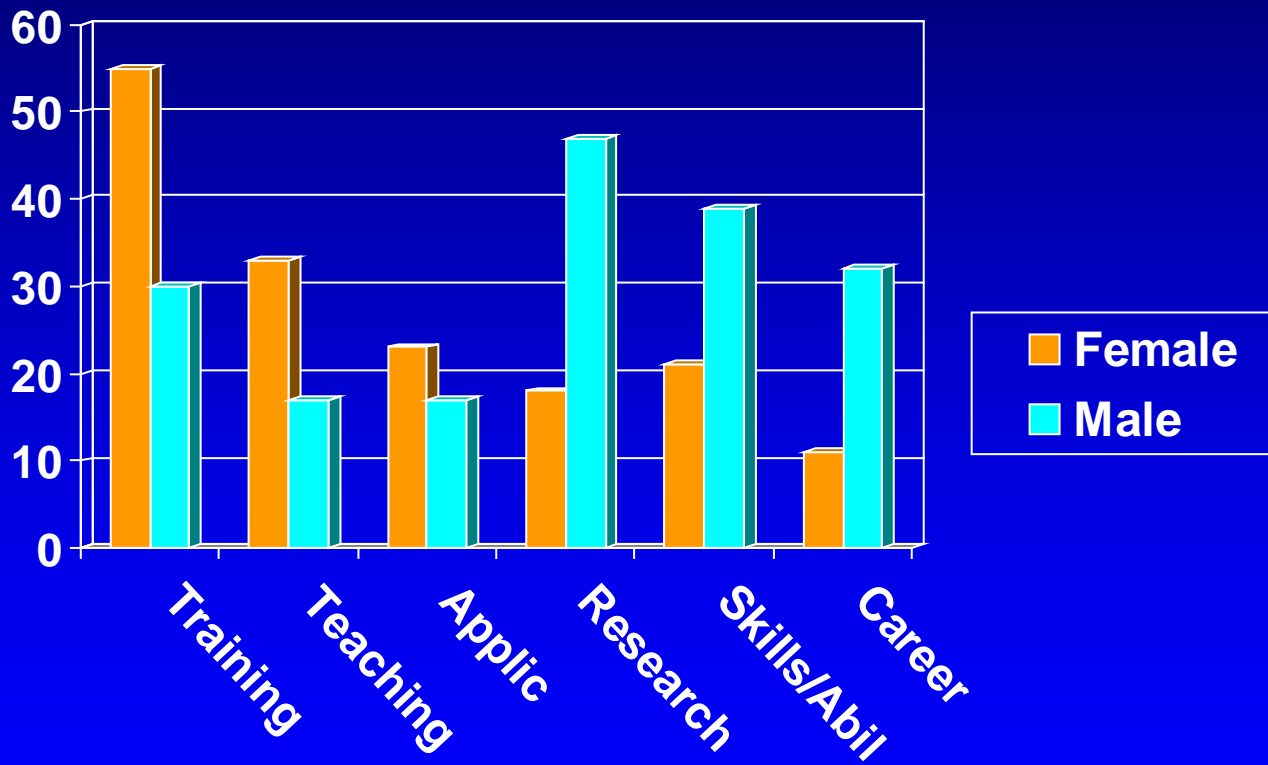
# Subtle gatekeeping bias

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- 312 letters of recommendation for medical faculty hired at large U.S. medical school
- Letters for women vs men:
  - Shorter (shorter is less persuasive)
  - 15% vs 6% of *minimal assurance*
  - 10% vs 5% with *gender terms* (e.g. “intelligent young lady”; “insightful woman”)
  - 24% vs 12% *doubt raisers* (“It appears her health is stable.”)
  - *Stereotypic adjectives*: “Compassionate,” “related well...” vs “successful,” “accomplished”
  - 34% vs 23% *grindstone adjectives*: “hardworking,” “dependable,” “conscientious”
  - Fewer *standout adjectives* (“outstanding,” “excellent”)
  - More *faint praise* (“It’s amazing how much she has accomplished.”)

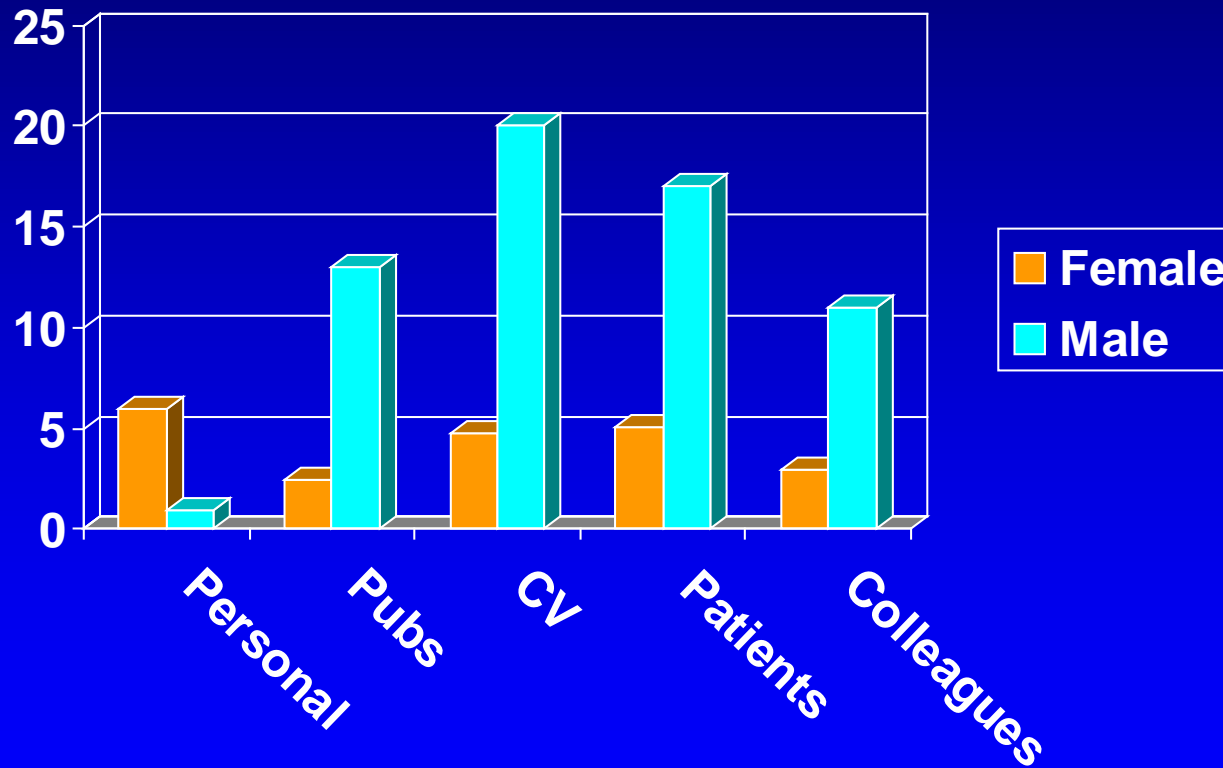


# Semantic realms following possessive (e.g. “her training”; “his research”)



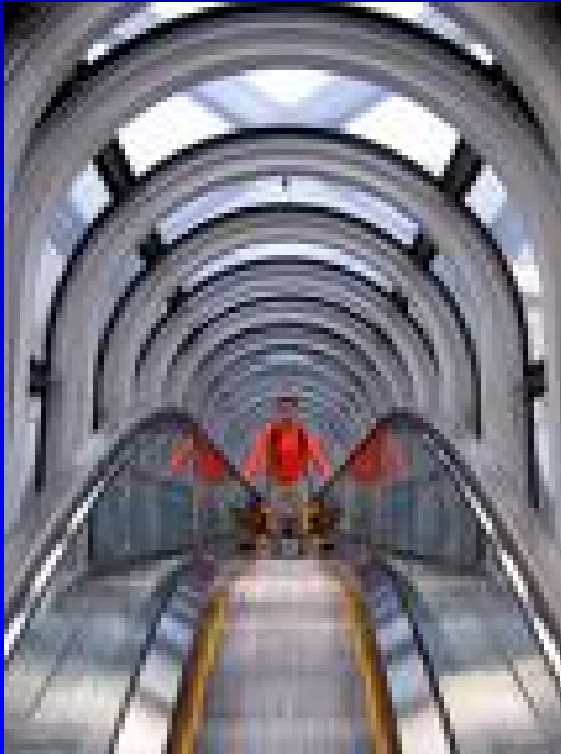


# Distinctive semantic realms following possessive (continued)





Glass ceiling  
for women.....

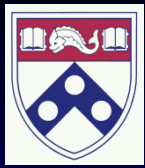


....Glass escalator  
for men



# Male and female gender terms

- In our society, males are agents, decisive, assertive, capable. Similar women are likely to be called aggressive, pushy, uncaring, or unfeminine.
- Stereotypically, traits that are considered good for males are considered negative for females.



# When a leader is bad: The language of tenure criteria

At 24 prestigious academic medical schools:

- Presence of word “**leader**” in tenure criteria is negatively associated with the number of women at medical schools becoming tenured.
- Not associated with advancement:
  - Other male terms or a high number of male terms ( $\geq 10$ ) were not associated with women’s advancement: [“*analytical*,” “*competitive*,” “*defends (one’s beliefs)*,” “*independent*,” “*individualistic*,” or “*risk*”];
  - Generally female terms such as “*sensitive*,” “*understanding*,” or “*yielding*”; or
  - Gender-neutral words such as “*friendly*,” “*helpful*,” “*inefficient*,” or “*truthful*,” were rarely used in the documents



# The Goldberg Paradigm (1968)



Student participants evaluated identical essays, differing only in the name of the author: male or female. 'Women' received lower evaluations unless the essay was on a feminine topic.



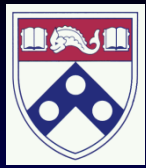
# Shifting standards

- People shift standards to justify a “reasonable” choice
- Subjects told to choose between two candidates on basis of education and experience; one candidate had more education and one had more experience
- When given only initials, candidate with more education was chosen 76% of the time and education was rated most important (48%)



# Shifting standards (continued)

- When male name was given to candidate with more education, male was again preferred by 75%
- But when female name was given to the resume with more education and male name to the resume with more experience, less than half the evaluators picked the person with more education (43%) and less than a quarter said that education was the most important characteristic (22%)



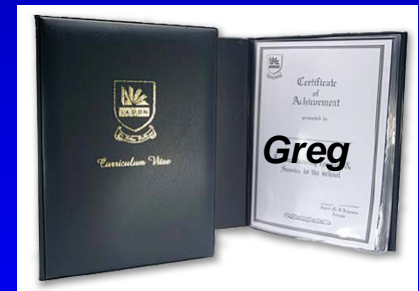
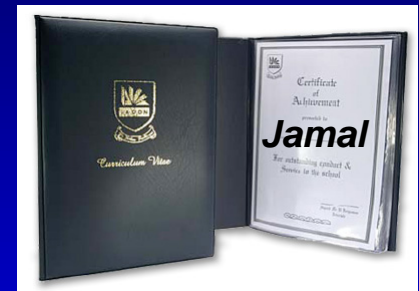
# Racial bias

- Fewer studies of race and academic hiring
- Resumes based on real job seekers sent to potential employers for a wide variety of jobs



# Evaluation of identical resumes: Race

- Applicants with African-American-sounding names had to send 15 resumes to get a callback, versus 10 for White-sounding names
- “White” names yielded as many callbacks as “Black” names with 8 additional years of experience
- The higher the resume quality, the larger the gap





# Aversive racism and selection decisions

- White students in 1999 reported less racial prejudice than in 1989
- In both time periods, they recommended whites and blacks equally often when qualifications were clearly strong or weak
- When qualifications were ambiguous, they recommended whites more often



# NIH Pioneer Awards First Round: What went wrong

In the first year of the NIH Director's Pioneer Awards, all men were chosen. According to Carnes et al, factors that could account for this included:

- Time pressure placed on evaluators,
- Absence of face-to-face discussion about applicants,
- Ambiguity of performance criteria, given the novelty of the award, combined with an emphasis on subjective assessment of leadership, potential achievements rather than actual accomplishments, and risk taking,
- Emphasis on self-promotion,
- Weight given to letters of recommendation; and
- The need for finalists to make a formal, in-person presentation in which the individual and not his or her science was the focus of evaluation.

FYI: 60 of 64 judges were men. 20% of applicants, 13% of those who underwent external scientific review, 2 of 21 finalists, and 0 of 9 awardees were women.



# NIH Pioneer Awards second round: What went right

Second year of Pioneer Awards, 5 of 13 awardees were women. The differences:\*

1. Reduction in number of applicants and greater familiarity with the application process may have reduced time pressure on reviewers.
2. NIH removed repeated mention of need for 'high-risk' research and 'intrinsic' leadership and 'potential' of scientist.
3. Higher proportion women in applicant pool - 26%
4. More accomplished women scientists on the review committee.
5. Women were specifically encouraged to apply.

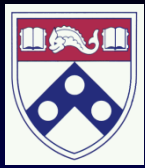
\* Carnes M. Nature 2006;442(24):868.



# Mitigating the influence of schemas

- Women are judged more positively if they are more than 30% of applicant pool or more than one third of a work group
- People can learn to reduce their reliance on schemas, e.g., by conscious act of will
- People strongly committed to egalitarian goals are less influenced by stereotypes

Heilman ME. The impact of situational factors on personnel decisions concerning women: varying the sex composition of the applicant pool. *Organizational Behavior & Human Performance* 1980;26:386-395. Sackett PR, Dubois CL, Noe AW. Tokenism in performance evaluation: the effects of work group representation on male-female and white-black differences in performance ratings. *J Applied Psych* 1991;76:263-267. Blair IV, Banaji MR. Automatic and controlled processes in stereotype priming. *J Pers & Soc Psych* 1996;70:1142-1163.



# Mental imagery can moderate implicit gender stereotypes

- Conducted 5 experiments on undergraduate students
- Measured implicit stereotypes before and after intervention:
  - Counterstereotype imagery (“imagine a strong woman”),
  - Stereotype imagery (“imagine a storybook princess or Victorian woman”), or
  - Neutral imagery (“imagine a house”)
- Results: **Significant reduction in measures associated with unconscious gender assumptions following counterstereotype imagery**

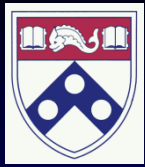


# Images of admired and disliked individuals combat automatic attitudes

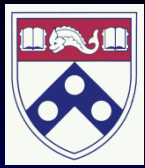
- Pictures of 40 well known individuals; 10 each in 4 categories:
  - Admired black (e.g. Denzel Washington)
  - Admired white (e.g. Tom Hanks)
  - Disliked black (e.g. Mike Tyson)
  - Disliked white (e.g. Jeffrey Dahmer)
- **White preference effect smaller after seeing positive black exemplars** (immediately and at 24 h)



Charles Drew MD



Marie Curie MD



Denzel Washington





Barbara McClintock MD



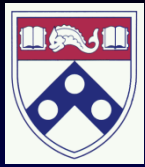


# Having time to focus reduces activation of gender schema

People are more likely to stereotype when they are distracted, tired, rushed, or otherwise cognitively burdened;

- Dossiers of men and women rated comparably during low attentional demand
- During high attentional demand, men were rated higher than during low demand and higher than women

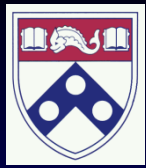
**Conclusion: when multi-tasking and pressed for time, evaluation defaults to prescriptive gender characteristics**



# Recommendations for searching for candidates: Accountability

- The search committee should report back to the larger unit and justify their decisions

Rationale: When individuals know they will be required to justify decisions, they engage in more complex thought processes



# Recommendations for searching for candidates:

- Take Implicit Association Test:

<https://implicit.harvard.edu/implicit/>

Rationale: Increase awareness of  
individuals of their unconscious biases



**Black Patient**

**White Patient**

or

or

*Bad*

*Good*



**a**

**Black Patient**

**White Patient**

or

or

*Bad*

*Good*

*Pleasure*

**b**

**White Patient**

**Black Patient**

or

or

*Bad*

*Good*



**c**

**White Patient**

**Black Patient**

or

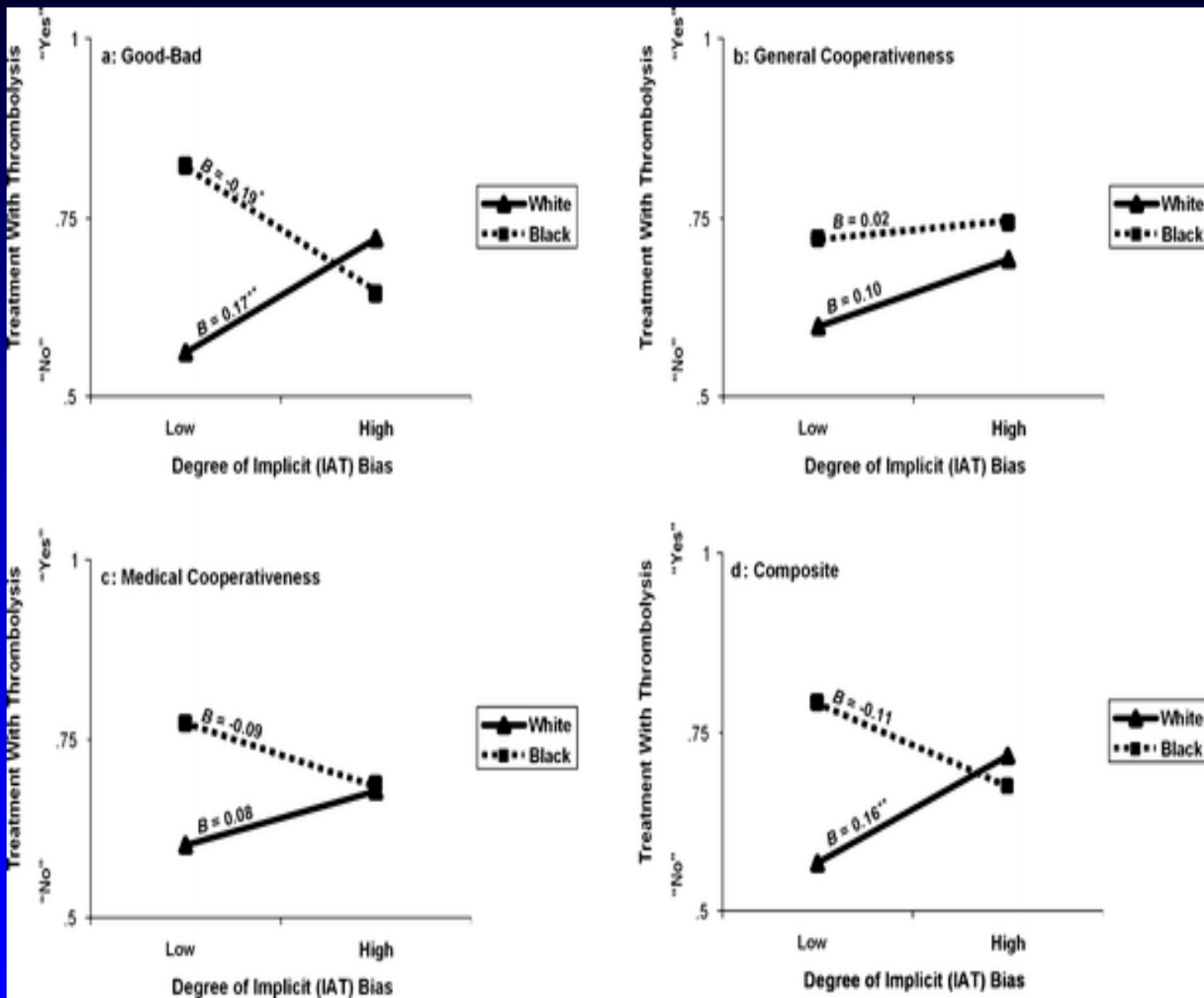
or

*Bad*

*Good*

*Pleasure*

**d**





# Recommendations for searching for candidates:

- Highlight minority and women exemplars

Rationale: Decrease unconscious biases



# Recommendation: Transparency

- The search criteria should be explicitly stated at the outset and guard against drift of criteria in response to candidates. Consider having non-voting “process person” to monitor. A visual matrix of six-twelve categories of desired skills, abilities, and qualifications may keep discussions on track.

Rationale: objective and explicit criteria hold all employees to the same standards



# Recommendation: Scope and outreach

- The search committee should define the search broadly and reach out to and include as many women and underrepresented in medicine as possible. (Avoid “building on our strengths” and counting on networks that routinely exclude women or URM’s.)

Rationale: A large number of women and URMs in the pool tends to counteract unconscious bias



# Active recruiting

- Actively seek candidates who contribute to diversity and excellence: don't just wait for applications to come in.
- Ask colleagues for names of top female and minority students in addition to male students.
- Widen the range of institutions from which you recruit.
- Consider women and minorities who may currently be underplaced: those thriving at less well-ranked institutions



# Recommendation: Committee composition and commitment

- Search committees and interviewers must be diverse and have a commitment to diversity.

Rationale: presence of diverse individuals increases expectations and leads group to more complex problem solving and fewer cognitive shortcuts (bias)



# Recommendation: Support and recognition

- Committee members should have adequate time, recognition, and support for their service. Committee chairs should schedule frequent meetings and have a clear agenda.

Rationale: Being rushed or distracted makes it more likely that stereotyping will kick in.



# Recommendation: Structured discussions

- Each member should write a short report or fill out a questionnaire for each candidate circulated prior to the meeting.

Rationale: keeps more names in play, pins people down to specific assessment criteria, and opens up rather than closes off the discussion of search criteria



# Focus on Specific Criteria during Evaluation

## SAMPLE CANDIDATE EVALUATION FORM

Candidate Name \_\_\_\_\_

Proposed position \_\_\_\_\_

curriculum vitae

research co-investigator

in-person interview

read letters of recommendation

observed teaching or research presentation

had lunch or dinner with candidate

observed clinical care

other, please list:

read research reports or publications

\_\_\_\_\_

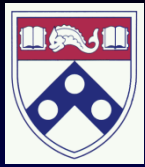
	Excellent	Good	Fair	Poor	Unable to Assess	Comments
Clinical skills						
Interpersonal skills						
Research skills						
Teaching skills						
# and importance of publications						
Grant track record						
Experience in leadership positions						
Educational background						
Fit with department's needs						
Potential for research Collaboration						



# Recommendation: Critical analysis of unconscious bias

- All supporting materials should be rigorously scrutinized for unconscious bias

Rationale: Letters on behalf of women and URMs may be laudatory but the terms of praise may be schema-based



# The interview

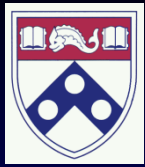
- Bring in more than one female and/or minority candidate to increase the likelihood of a hire.
- Lengthen the interview to minimize default to stereotypes.
- Give candidates an opportunity to talk to someone—not on the search committee and preferably not even in the same department—about climate issues and initiatives.

**Treat female and minority applicants as scholars—not as people who are valuable because they are female and/or minority.**



# The interview

- Do not ask illegal and discriminatory questions!
- “The University of Pennsylvania does not discriminate on the basis of race, sex, sexual orientation, gender identity, religion, color, national or ethnic origin, age, disability, or status as a Vietnam Era Veteran or disabled veteran.”



# Illegal job questions

Focus on the behaviors, skills, and experience needed to perform the job.

Do not ask questions such as the following:

- Where were you born?
- How many children do you have? Or, Are you planning to have kids?
- Will your spouse need to find a job here?
- Are you comfortable working for a female boss?
- You would be much younger than the people who report to you. Is this a problem?
- How many more years do you plan to work until you retire?
- Have you experienced any serious illnesses?



# The hassles of everyday life

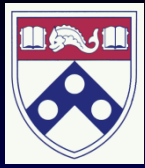
- Disparaging, dismissive or humiliating language can creep into everyday interactions and make life unpleasant for women and URMs. Sensitive attention to language and behavior is required in all professional relations, not just in the search process.

Rationale: It is not enough to bring women and URMs to your institution. You need to create an environment that keeps them there as well.



# The importance of diversity

- Biomedical science and clinical medicine need all the talent they can muster. It is self-defeating to exclude equally or more talented candidates on the basis of unconscious bias
- Business studies conclude that teams with diverse composition are more creative and successful than homogeneous teams
- Increasing diversity is in the institution's interests as well as the interests of women and URMs, and it is achievable by people of good will



“Our struggle today is not to have a female Einstein get appointed as an assistant professor. It is for a woman *schlemiel* to get as quickly promoted as a male *schlemiel*.”

Former Congresswoman Bella Abzug



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<https://www.implicit.harvard.edu/implicit>

[http://www.umich.edu/~advproj/FRW\\_102307.ppt#351,1,Workshop on Faculty Recruitment for Diversity and Excellence](http://www.umich.edu/~advproj/FRW_102307.ppt#351,1,Workshop on Faculty Recruitment for Diversity and Excellence)

