

Unconscious bias & challenges to fair assessment



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TORONTO

A recording of this talk is available here: www.utsc.utoronto.ca/vpdean/unconscious-bias

Unconscious bias & challenges to fair assessment



1. Patterns of representation

2. Schema & Unconscious bias

- 6 case studies, Assessment challenges, gender & race

3. Moving forward

- Structural
- Personal

Representation: patterns

Strengthening Canada's Research Capacity: The Gender Dimension. Panel report 2012

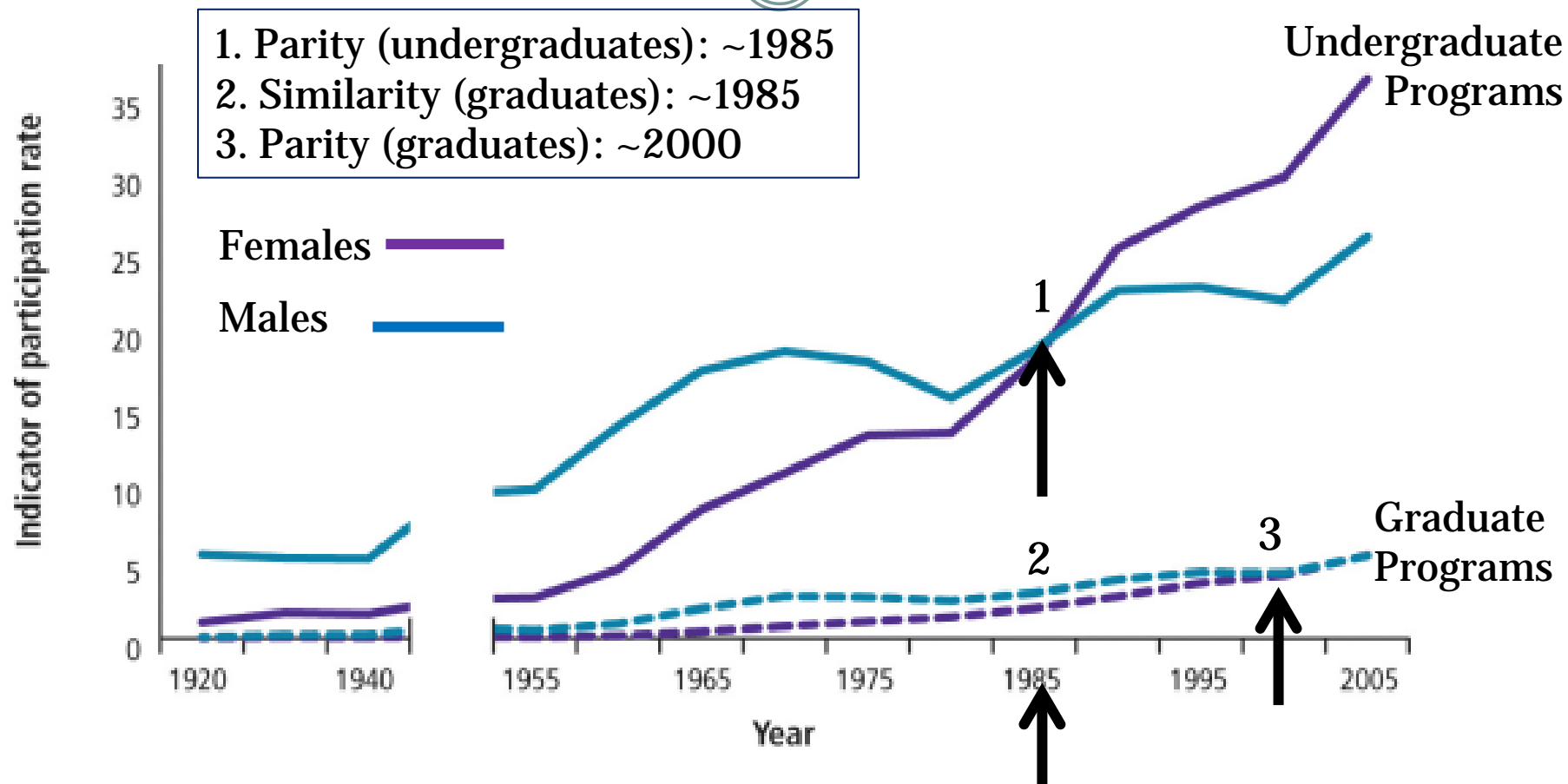
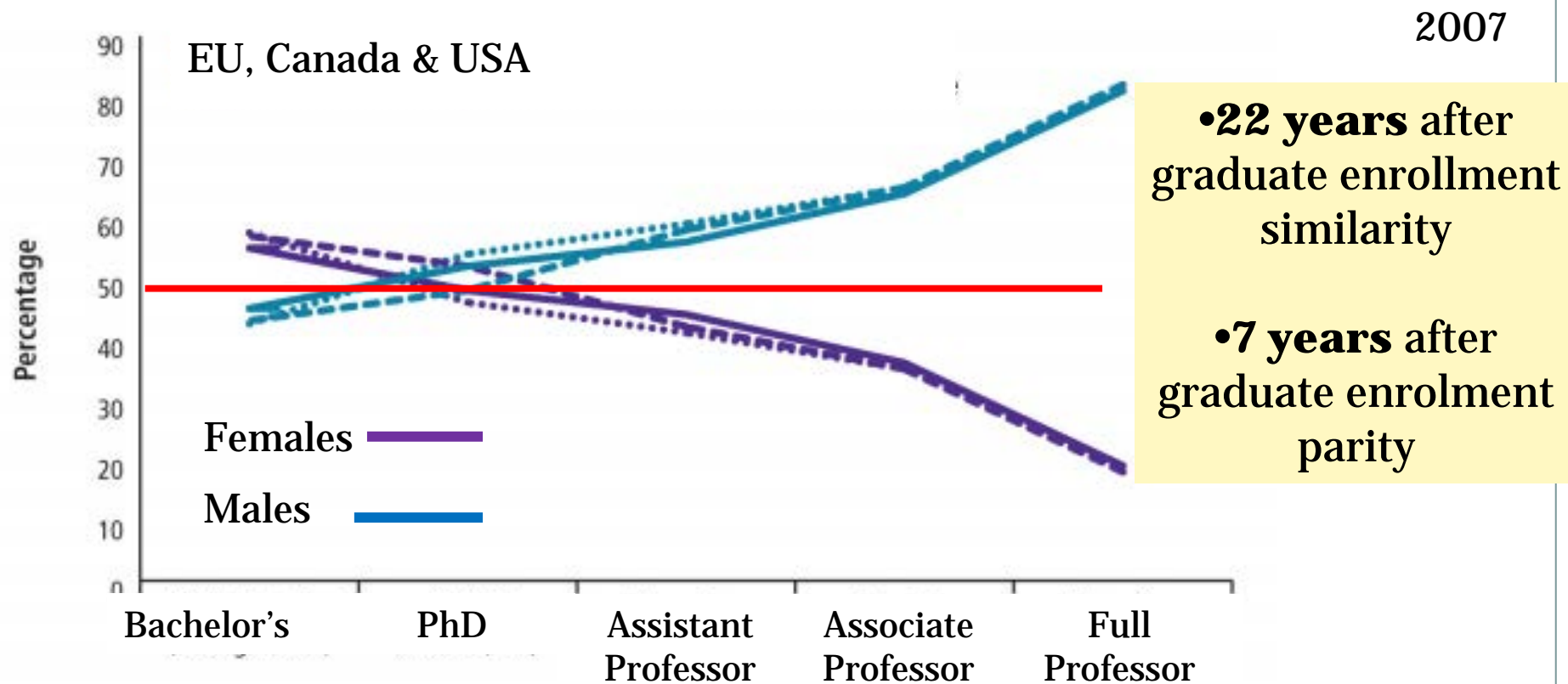


Figure 1. Growth in University Enrolment since the 1920s

Expert panel on women in university research, Council of Canadian Academies

Representation: patterns

Strengthening Canada's Research Capacity: The Gender Dimension. Panel report 2012

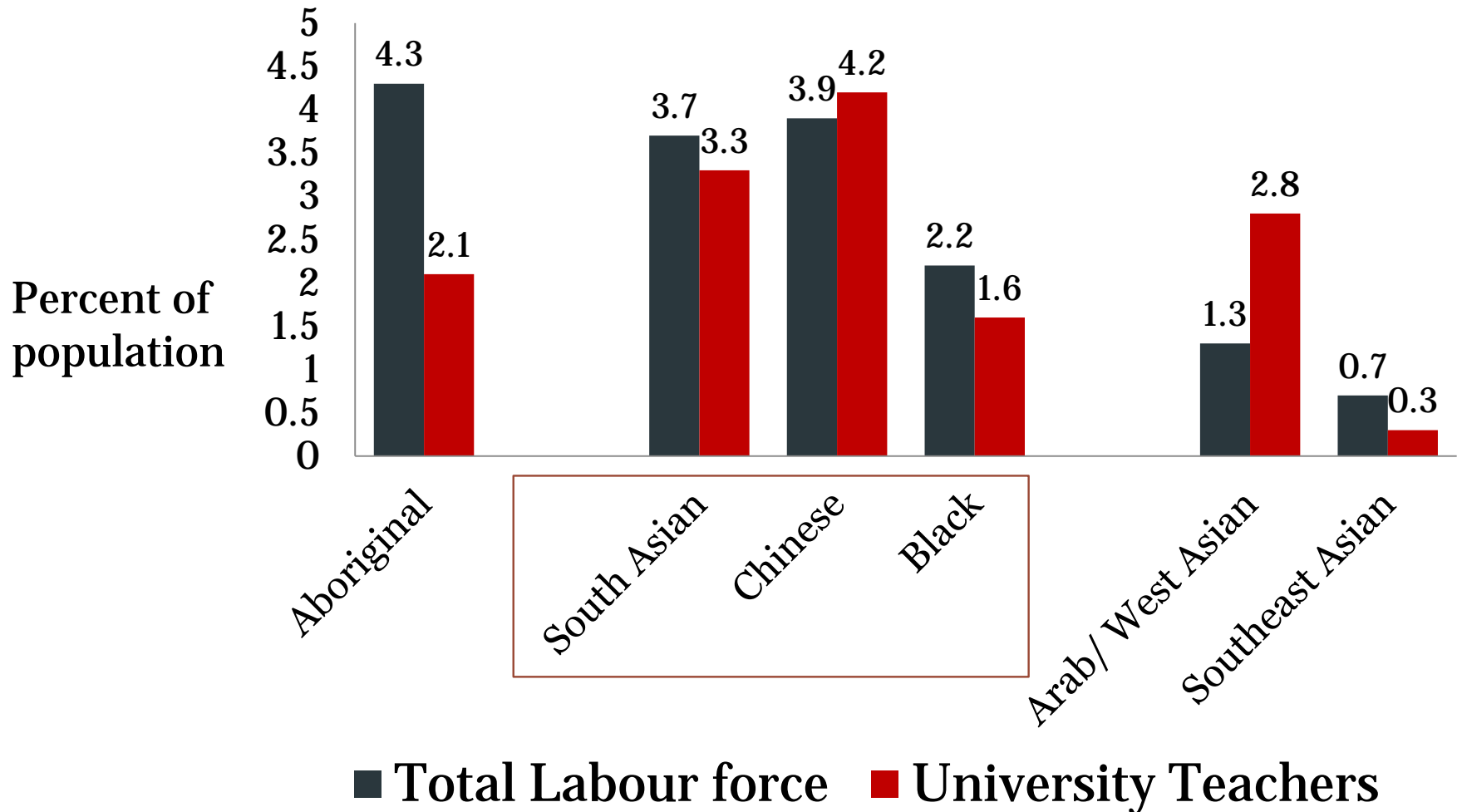


Women are under-represented at the higher ranks

Total % female faculty (2006)
38.7%

Expert panel on women in university research, Council of Canadian Academies

Representation: patterns



Academic leadership: patterns



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Canada Research Chairs

Canada

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| | | |
|---|--|---|
|  <p>Judy Illes THE UNIVERSITY OF BRITISH COLUMBIA</p> <p>Canada Research Chair in Neuroethics</p> |  <p>Jianhong Wu YORK UNIVERSITY</p> <p>Canada Research Chair in Industrial and Applied Mathematics</p> |  <p>Melvyn Goodale WESTERN UNIVERSITY</p> <p>Canada Research Chair in Visual Neuroscience</p> |
|---|--|---|

Academic leadership: patterns

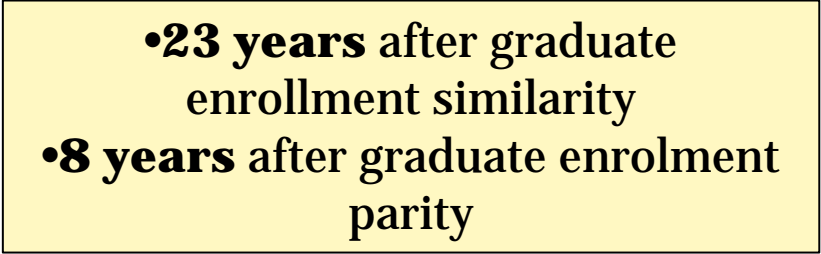


Canada Research Chairs program

CRC 2003 (first year).

17% awarded to women (~30% of faculty were women*)

- Settlement with Canadian Human Rights Commission over charge of discrimination



•**23 years** after graduate enrollment similarity
•**8 years** after graduate enrolment parity

Canada Excellence Research Chairs 2008 (first year).

0% (n=19) awarded to women

0% (n=36) of short-listed proposals from women

- Strengthening Canada's Research Capacity: The Gender Dimension. 2012

Leadership: patterns



The higher in the ranks one looks, the fewer women are present in comparison to men in positions such as full professors and presidents of universities, leaders of government agencies, and CEOs of private sector companies.

The expert panel on women in University research (2012)

After decades of efforts to diversify, corporate boards are 87.7% white and 84.5% male.

Zweigenhaft, RL. 2013. 'Who Rules America?'

Canadians value equity & diversity



Reflecting this diversity in our own community is uniquely valuable to the University as it contributes to the diversification of ideas and perspectives and thereby enriches our scholarship, teaching and other activities. We will proactively seek to increase diversity among our community members...

**University of Toronto Governing Council, 2006*

And yet...

Under-representation is still a problem* in Canada in the professoriate, corporations, management/leadership, politics...

*<http://www.catalyst.org/knowledge/visible-minorities-canada>

Current patterns



Why?

- The pool
- Ability & Interest
- Paid-Work-life balance & institutional culture
- ‘The glass ceiling’
 - Biases in assessment

Bias



Differential evaluation of one group and its members
relative to another

Explicit/ Conscious

Person is aware of his/her evaluation

Expression of bias is intentional

e.g. racism, sexism, homophobia

Unconscious/Implicit Bias



“Sometimes the behavioral research leads us to completely change how we think about an issue. For example, many of our anti-discrimination policies focus on finding the bad apples who are explicitly prejudiced.

In fact, the serious discrimination is implicit, subtle and nearly universal.”

David Brooks,
New York Times, 2013



Schema & Unconscious bias



- **Schema:** categorical assessments of individuals and relationships between individuals
 - *Shape expectations & evaluations*
- **Expectations & evaluations based on group identification lead to *unconscious or implicit bias***

Bias



Differential evaluation of one group and its members relative to another

Implicit/Unconscious Bias :

- Person does not perceive or endorse evaluation

Expressions are:

- Not related to self-identified group of evaluator
- Unintentional, automatic
- Often contradictory to conscious beliefs


Implicit bias

The 2013 general audience book that fully explains the IAT

PROJECT IMPLICIT SOCIAL ATTITUDES
Log in or register to find out your implicit associations about race, gender, sexual orientation, and other topics!

E-mail Address

Or, continue as a guest by selecting from our available language/nation demonstration sites:

 Canada (English, Français)

PROJECT IMPLICIT MENTAL HEALTH
Find out your implicit associations about self-esteem, anxiety, alcohol, and other topics!

PROJECT IMPLICIT FEATURED TASK
Measure your implicit associations with U.S. presidential candidates

Implicit association tests

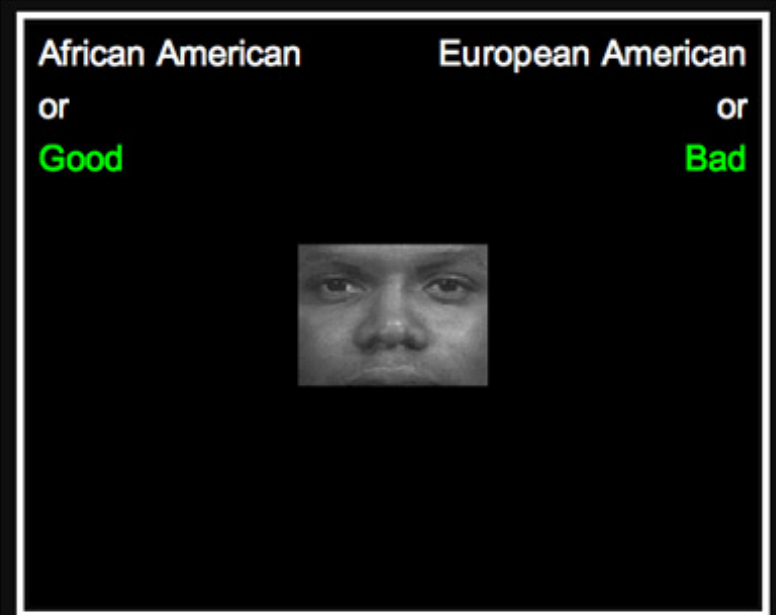
- **Task:** instructed to associate images and words with categories
 - Consistent or contrary to stereotypes
- **Measurement:** variation in response speed & error rates

Anti-black implicit bias



Implicit association tests

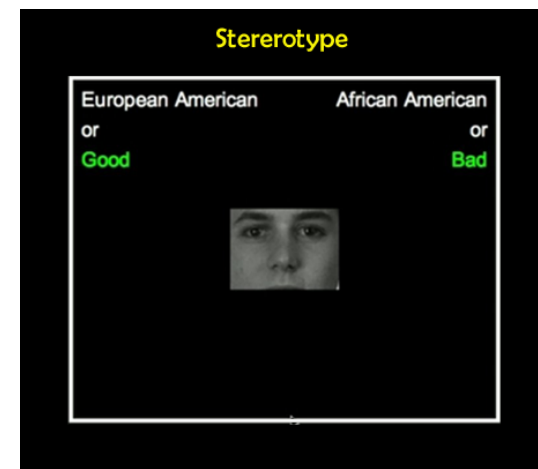
Against Stereotype



Stereotype



Anti-black implicit bias



Strong implicit bias for **black**

Strong implicit bias for **white**

No bias

- 1.0

1.0

>3 million scores (2002-2015)

Greenwald et al 1998

Anti-black implicit bias



Strong implicit bias for **black**

Strong implicit bias for **white**



>3 million scores (2002-2015)

1. Assessing excellence: gender bias

Fellowship applications

- Swedish Medical Research Council
- 1995 Research fellowship competition
- Scientific excellence*



Success:

8% of female applicants
24% of male applicants

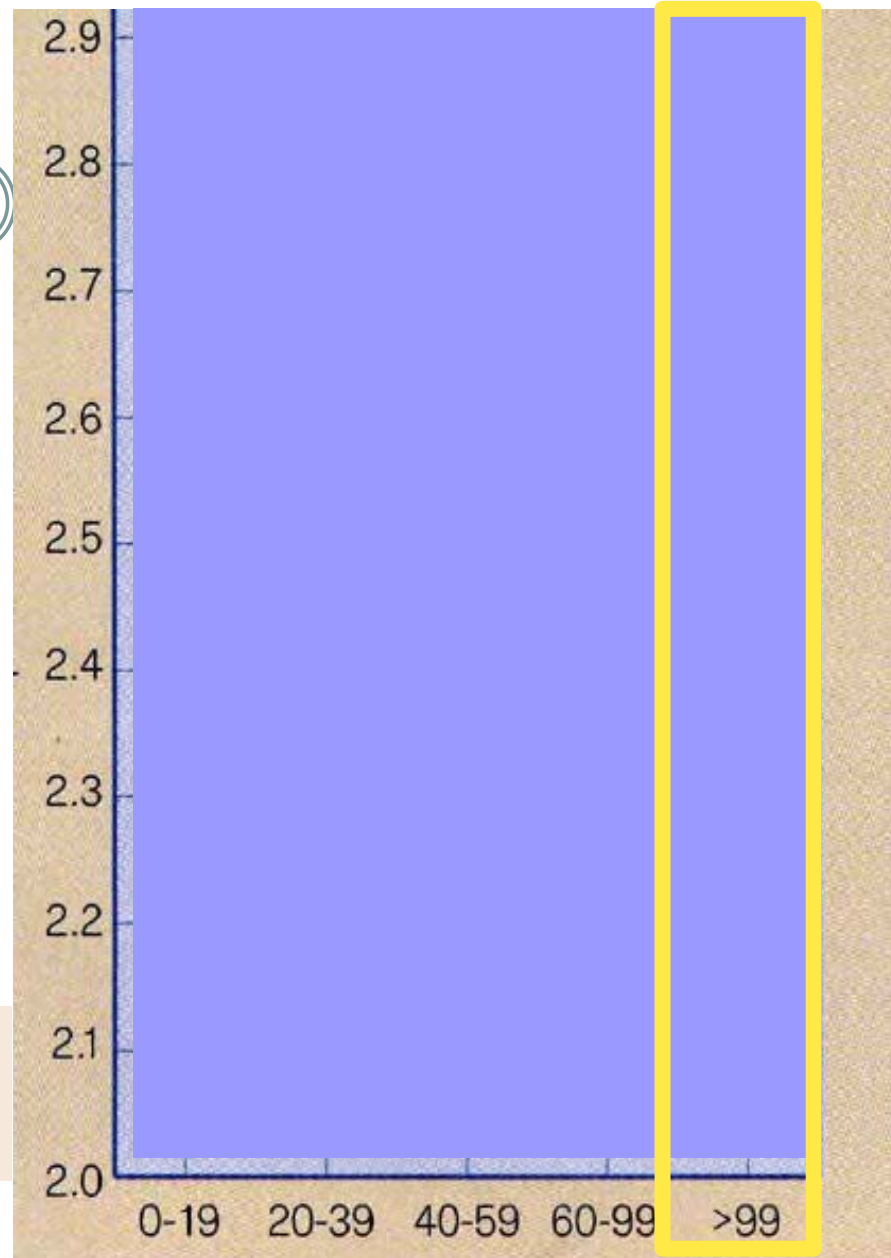
Did women publish fewer
high-quality papers?

Calculate total impact:

- # publications
- Journal impact

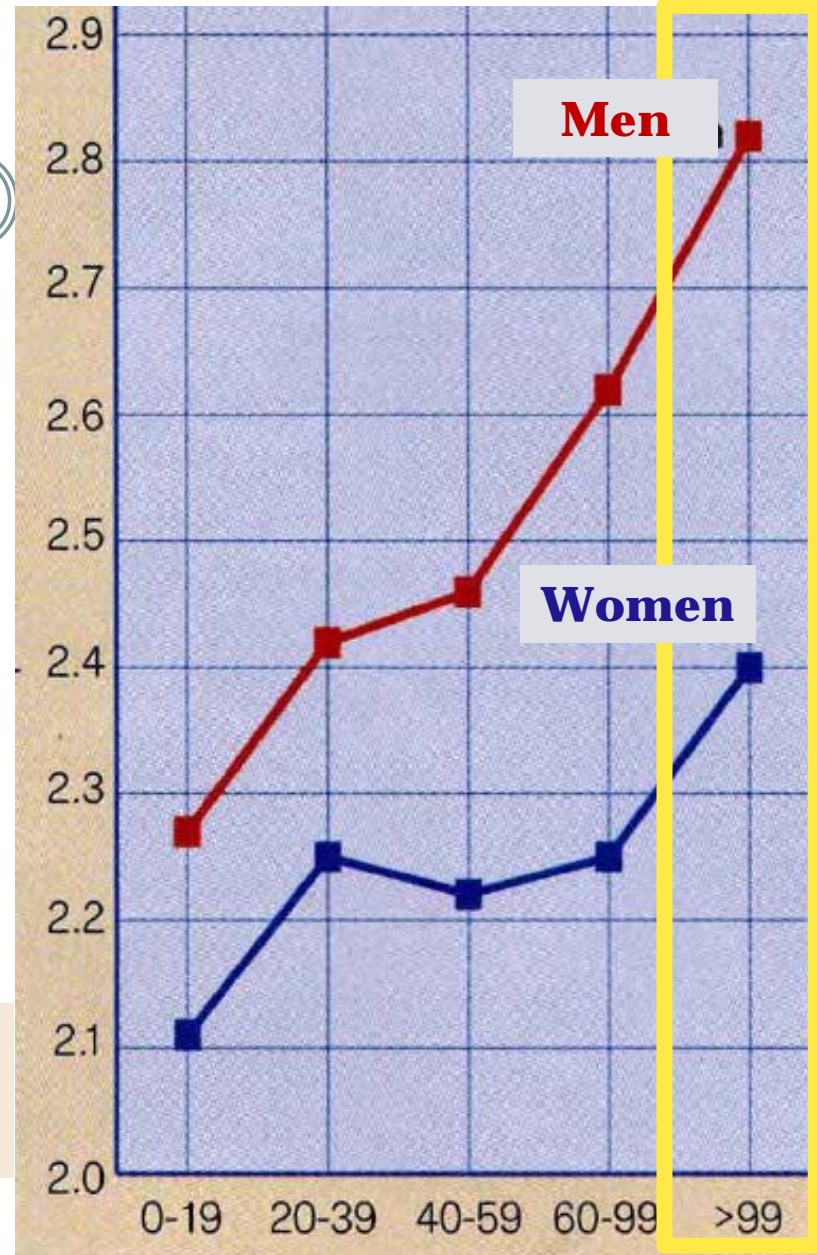
Compare to reviewer scores

Reviewer
score



“...strongly suggests peer reviewers **cannot** judge scientific merit independent of gender.”

Reviewer score



Wennerås & Wold. 1997. *Nature*

Gender-blind Total Impact

2. Assessing Talent: gender bias



Orchestra Auditions



www.maddison.com

**Major orchestras in the
USA**

Pre-1970: < 10% women

Goldin & Rouse 2000. *American Economic Review*

2. Assessing Talent: gender bias



Orchestra Auditions



www.maddison.com

Major orchestras in the USA

Pre-1970: < 10% women

1970's & 1980's:

Auditions rather than 'hand picking' (1970's/ 1980's)

- assessment by a jury

- Adoption of 'blind' auditions**

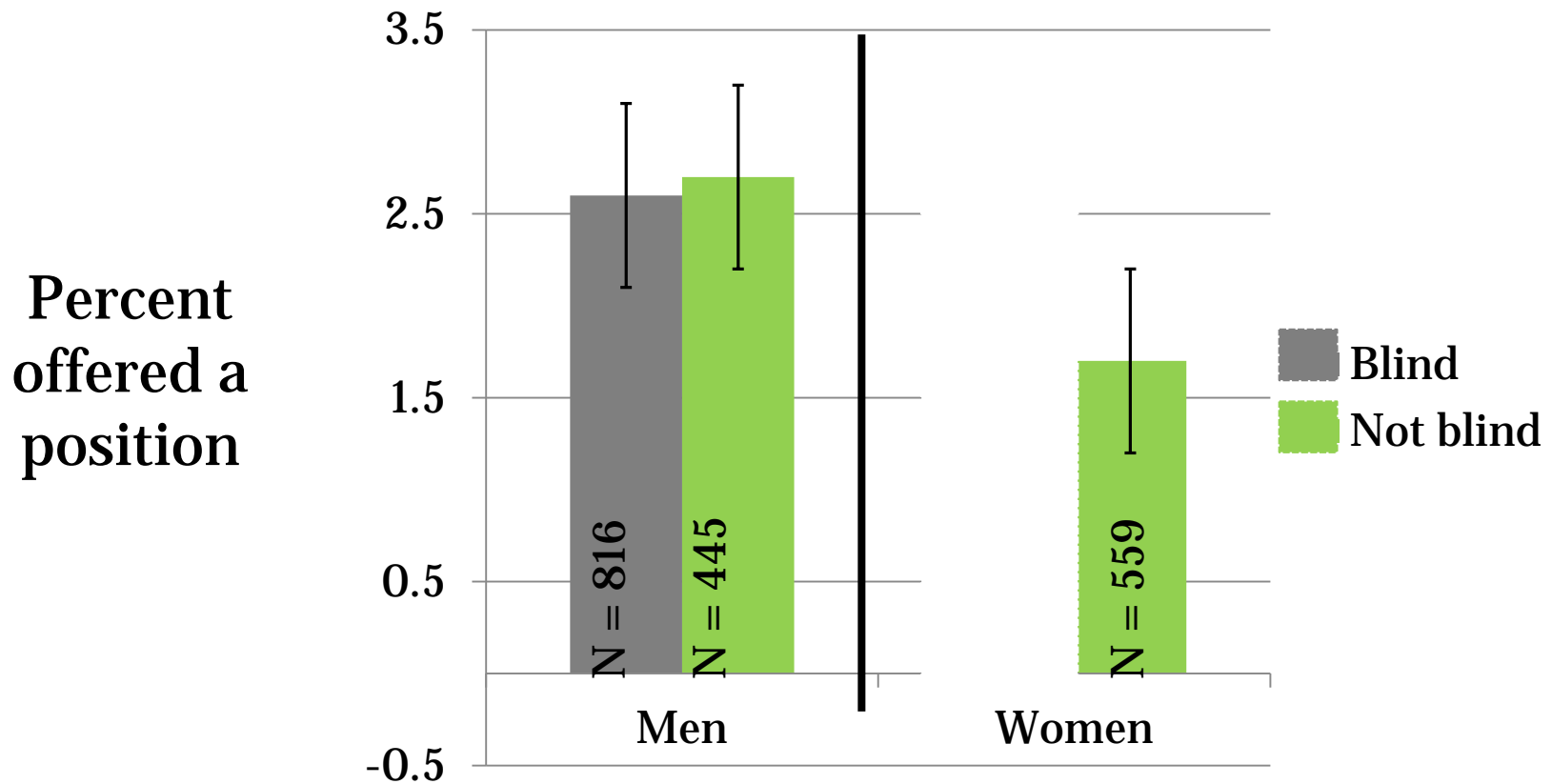
Goldin & Rouse 2000. *American Economic Review*

2. Assessing Talent: gender bias



Repeated measures:

Individuals who auditioned under *both* 'blind' and 'not blind' conditions



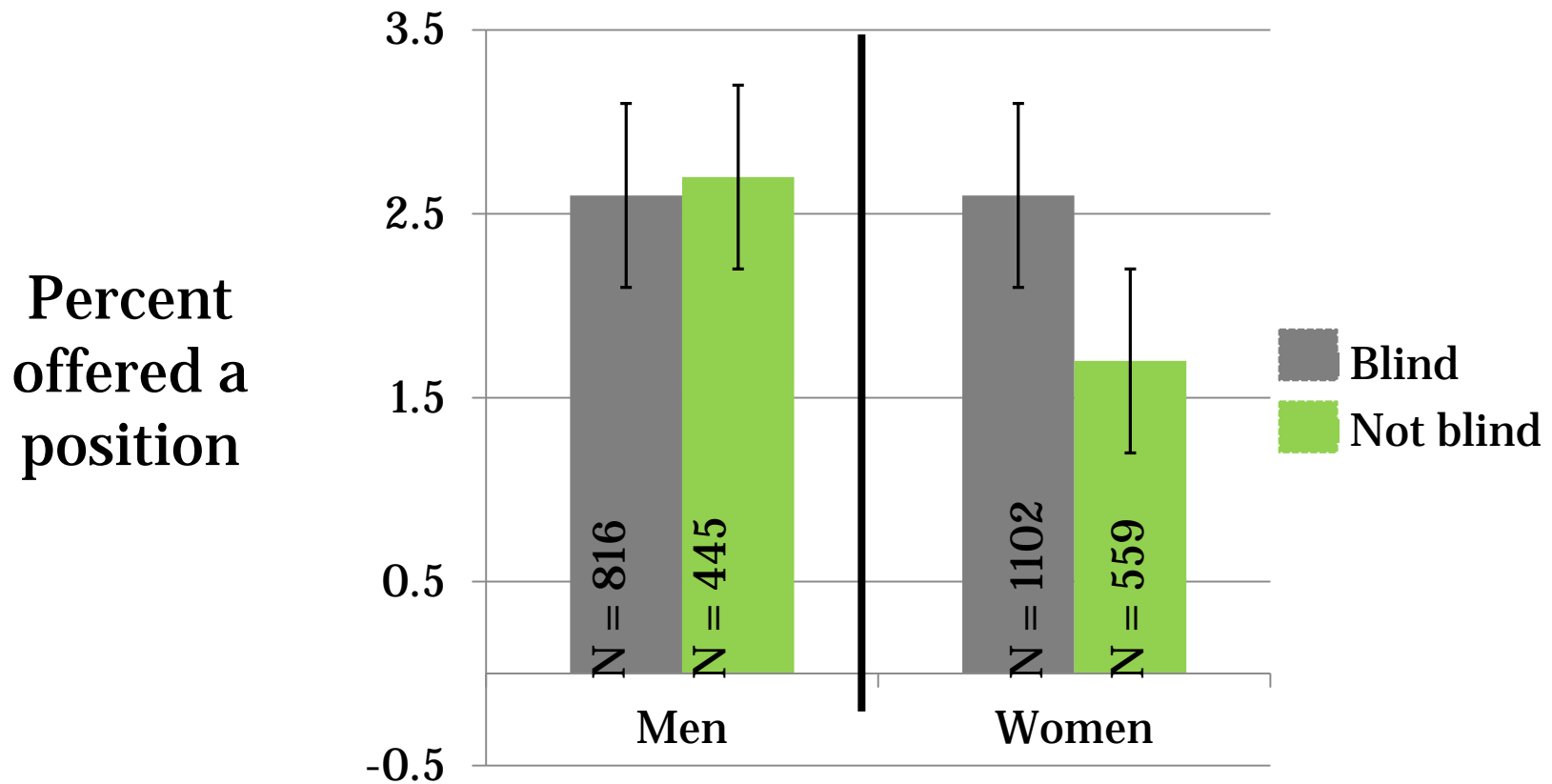
Goldin & Rouse 2000. *American Economic Review*

2. Assessing Talent: gender bias



Repeated measures:

Individuals who auditioned under *both* 'blind' and 'not blind' conditions



Goldin & Rouse 2000. *American Economic Review*

3. Assessing Ability & Potential: anti-black bias



Eastern USA

Performance assessment of managers

Three large companies (electronics, banking, communications)

Subjects:

Black & White managers matched for job function $n = 748$

Supervisors : evaluation of managers

- Job performance ○ **white** managers > **black** managers
- Attribution of performance
- Career advancement prospects

3. Assessing Ability & Potential: anti-black bias



Eastern USA

Performance assessment of managers

Attribution of performance

- To ABILITY / EFFORT:
 - **white** managers > **black** managers
- To HELP from others:
 - **black** managers > **white** managers

3. Assessing Ability & Potential: anti-black bias



Eastern USA

Performance assessment of managers

Attribution of performance

- To ABILITY / EFFORT:
 - **white** managers > **black** managers
- To HELP from others:
 - **black** managers > **white** managers

Career advancement prospects

- **white** managers > **black** managers

Other studies:

Anti-Black Bias & compromised assessment



- Assessment of leadership ability of black leaders (vs. whites)*
 - Rosette et al 2008; Knight et al 2003
- Career mobility of black executives (vs. whites)
 - Guest, 2016

*No effect
of race of
evaluator

- Response to requests for graduate mentorship by black & white students*
 - Milkman et al 2015

Experimental

- Recognition of errors by blacks vs. whites*
 - Arvin et al 2014

Experimental

- Assessment of pain, treatment & empathy for black patients (vs. whites)
 - Berlinger et al 2016, Hoffman et al 2016
 - Chapman, Kaatz & Carnes, 2013

- Distinguishing armed or unarmed black civilians (vs. whites, hispanics, asians)*
 - Sadler, Correll, Park, & Judd, 2012

Experimental

And many, many more...

Other studies: Gender Bias & compromised assessment



(by both male & female assessors)

- Assessment of leadership ability/qualities **Experimental**
(Geis et al 2006, Scott & Brown 2006, Rojahn & Willemsen, 1994)
- Reactions to leaders (Eagly et al 1995; Butler & Geis 1990)
- Paper acceptance rates (Tregenza 2002) **'Natural' Experiment**
- Letters of recommendation (Trix & Psenka, 2003) **Experimental**
- Student evaluations of instructors (Basow 1998; McPherson et al 2009; Reid, 2010, MacNell et al 2014)
- Assessment of scientific competence
(Wenneras & Wold 1998; Steinpreis et al 1999, Moss-Racusin et al . 2012) **Experimental**
- Invitations to give plenary talks (Tower 2008)
- Nominations (& elections) to prestigious societies, (award) of prestigious prizes
(Lincoln et al , 2012; EOS editorial, Am.Geophysical Union, 2011).

And many, many more...

Experimental approaches to measuring bias

Evaluation of behaviour

- Actors/confederates & scripts
- Recordings of interactions

Evaluation of documentation

- CV / Resume
- Narratives

Experimental assignment of
Gender/ Race x role



Standard scenarios or documents
Modify gender / race of primaries

4. Assessing potential: anti-black bias



Experiment

Trained confederates

Posing as applicants:

- Black
- Latino
- White

Applied for 340 entry-level jobs

1. All young men, matched for physical/verbal characteristics
2. Assigned similar resumes

New York City

Pager et al 2009



Also: Oreopoulos and Dechief, 2012 (Vancouver, Toronto, Montreal)

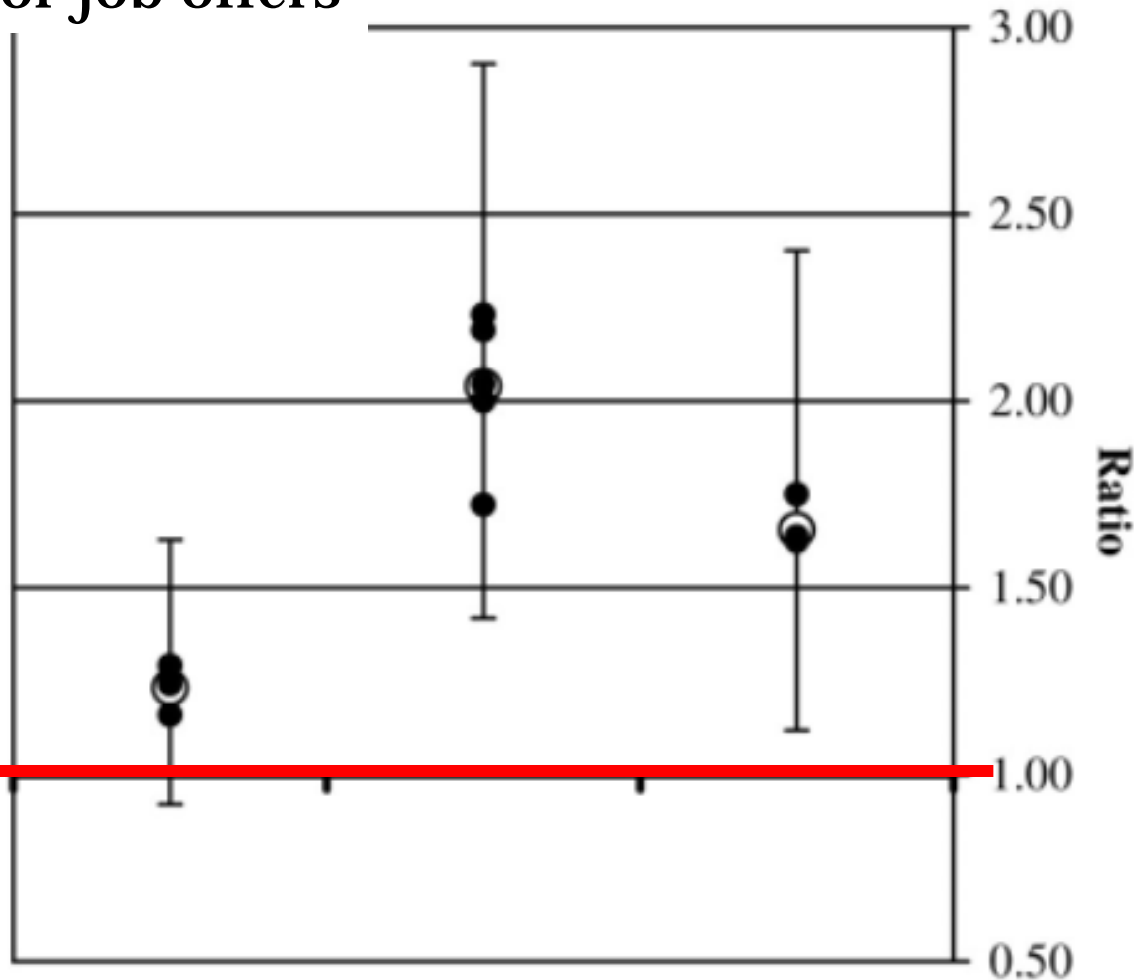
4. Assessing potential: anti-black bias

Call-backs or job offers



New York City
Pager et al 2009

**Equal to
white
applicants**



**White/
Latino**

**White/
Black**

**Latino/
Black**

see: Oreopoulos, 2009

5. Assessing performance: anti-black bias



Law partner's assessment of writing competence

Identical legal memos with **22 deliberate errors**

- task: assess 'writing competency of young attorneys'

Name: Thomas Meyer

Seniority: 3rd Year Associate

Alma Mater: NYU Law School

Race/Ethnicity: African American

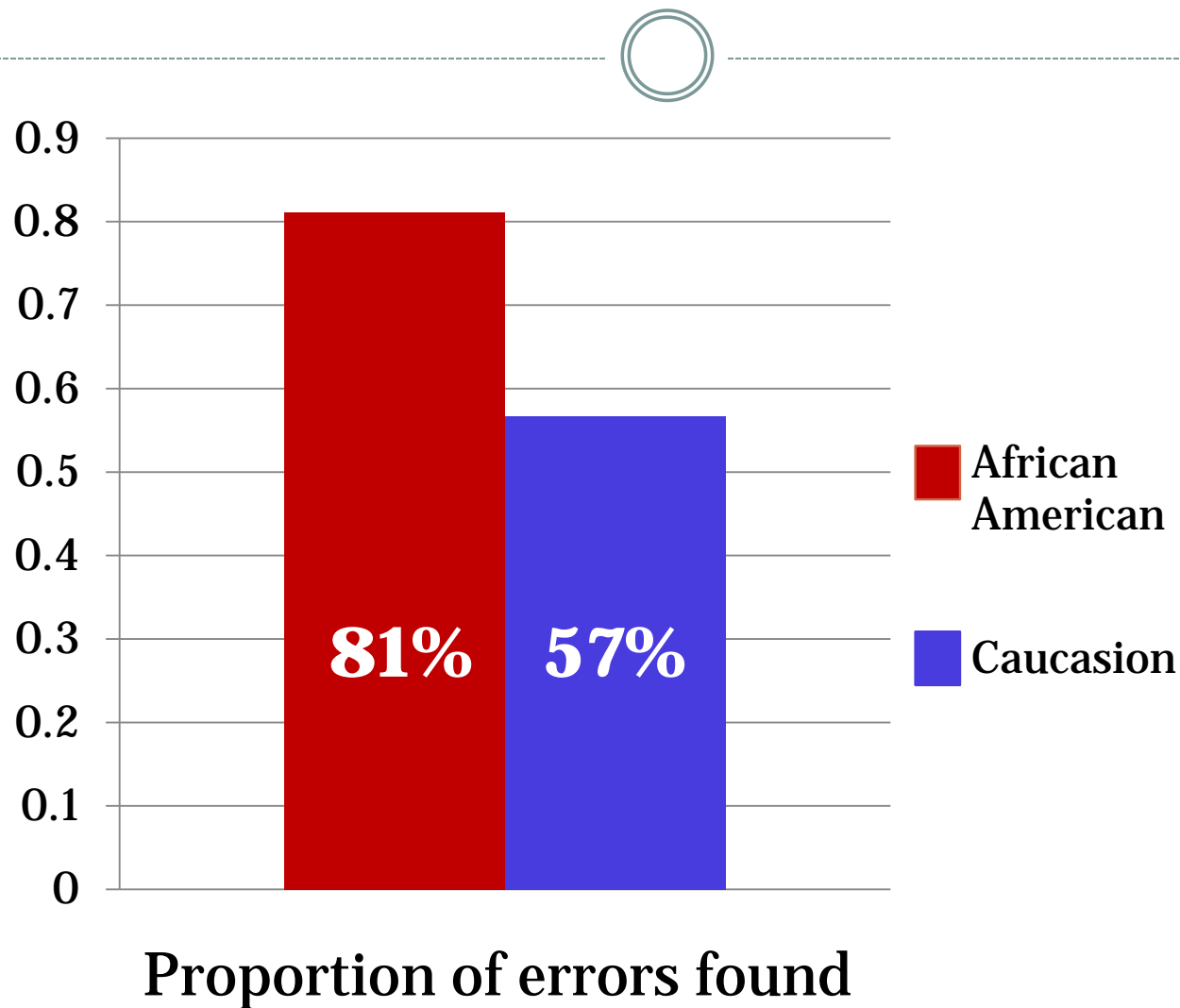
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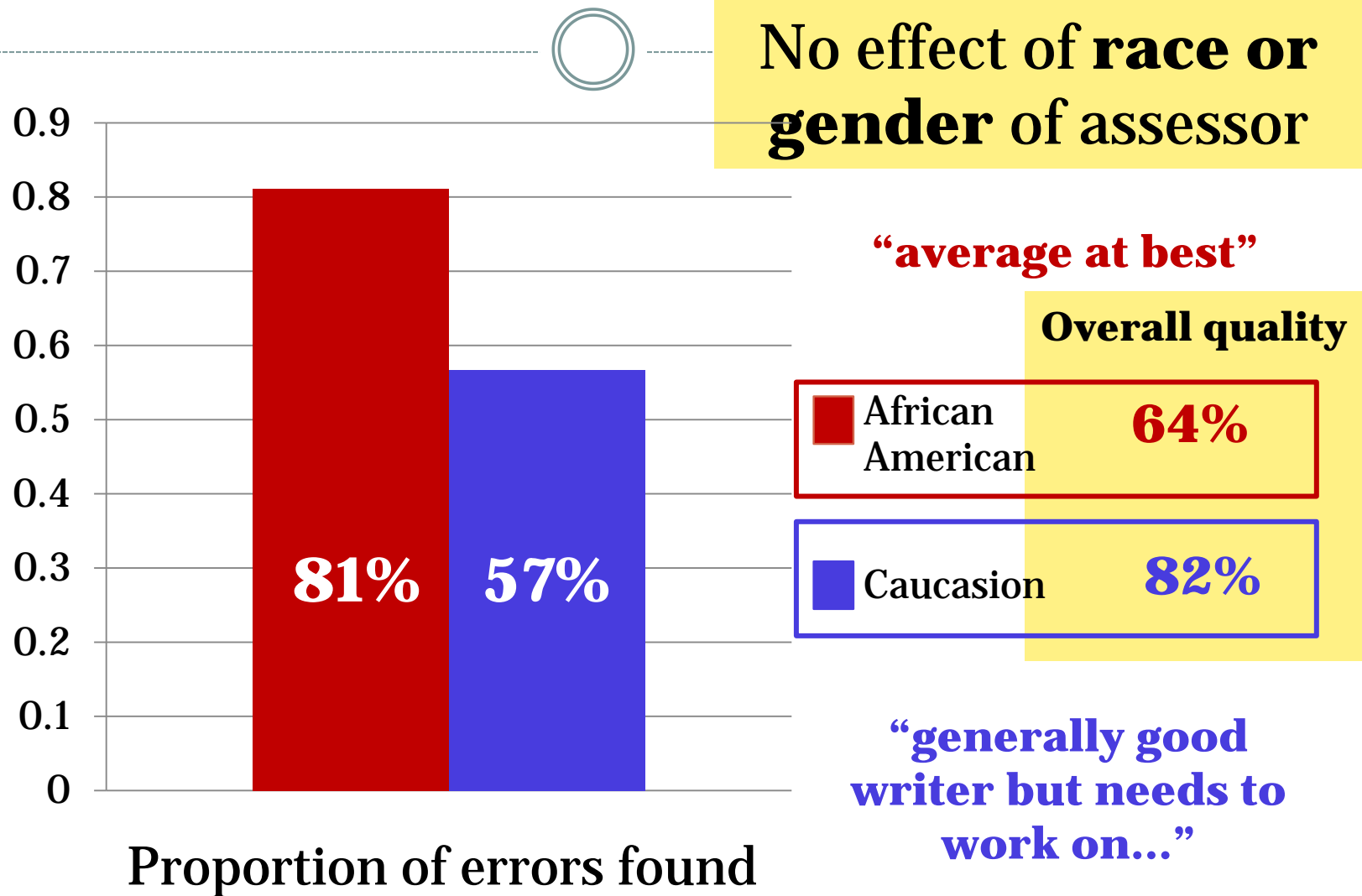
Alma Mater: NYU Law School

Race/Ethnicity: Caucasian

5. Assessing performance: anti-black bias



5. Assessing performance: anti-black bias



6. Assessing Leadership & Gender Schema



Consistent results across studies = penalty for 'role incongruity'

| Beliefs about males: | Beliefs about leaders: | Beliefs about females: |
|---|---|--|
| Dedicated Determined Assertive Competitive | Dedicated Determined Charismatic Competitive | Helpful Caring Sympathetic Kind |
| 'Agentic traits' | | 'Communal traits' |

- Schema (stereotypes) affect our judgement
- e.g., agentic traits seen as negatives when exhibited by women

6. Assessing Leadership: gender bias

Solo-leader* or *Co-leader
(scripted) conditions x gender

Assessed attributes of leaders:

Strengths

- Ability, skill, intelligence
- Warmth & sensitivity

Weaknesses

- Bossy & Dominating
- Too emotional

Level of participation

- Fewer contributions desirable



Butler & Geis, 1990

6. Assessing Leadership: gender bias

Solo-leader* or *Co-leader
(scripted) conditions x gender

Assessed attributes of leaders:

Strengths

- Ability, skill, intelligence
- Warmth & sensitivity

Females << Males

Females > Males

Weaknesses

- Bossy & Dominating
- Too emotional

Females >> Males

Females >> Males

Level of participation

- Fewer contributions desirable

Females >> Males

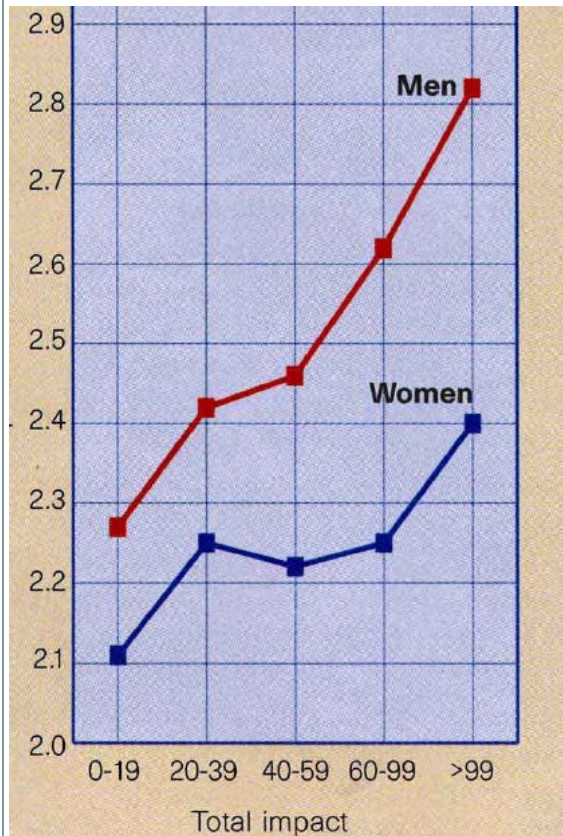


Moving forward



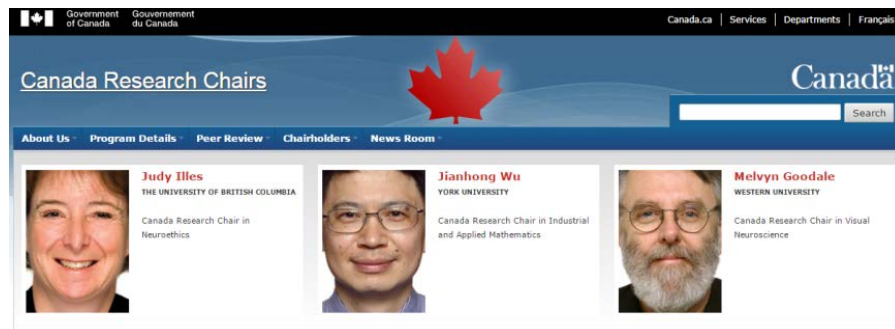
- Targets, monitoring
 - Diversified assessment groups
- Structural
- Education about bias
- Source monitoring
 - Recognize signs of bias
- Personal

Moving forward: **Structural**



Institutional responses:

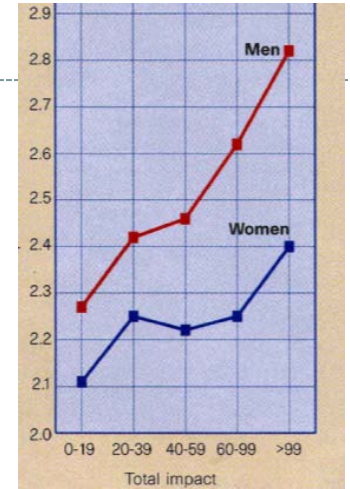
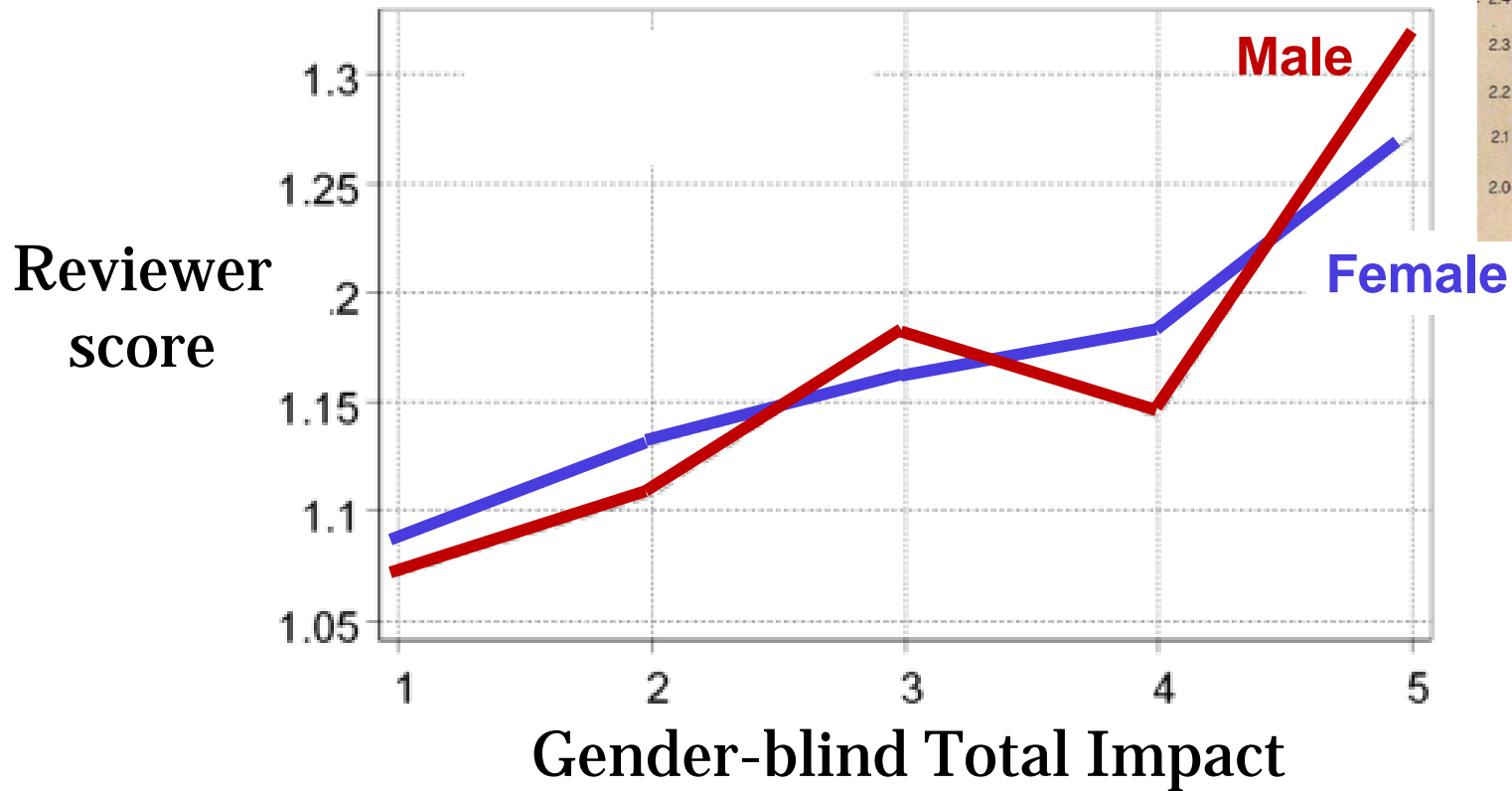
1. Equity of outcomes monitored
 - *Evaluated relative to **targets***
2. Balanced review boards*
3. Reviewers educated about bias
- (4. Blind review)



Moving forward: Structural



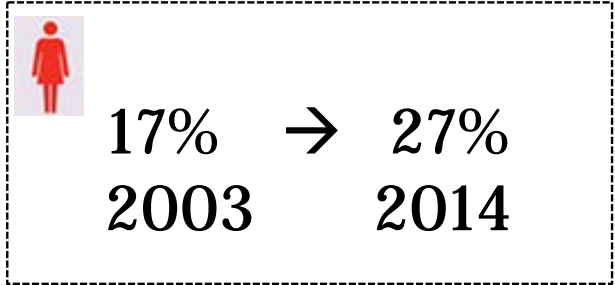
Swedish Medical Research Council
Grant applications (2004)



Sandstrom & Hallsten 2008

Moving forward: Structural

Canada Research Chairs



Filled Canada Research Chairs Positions as of October 2014

Total number of filled Canada Research Chair positions 1,667

Number of female chairholders 449

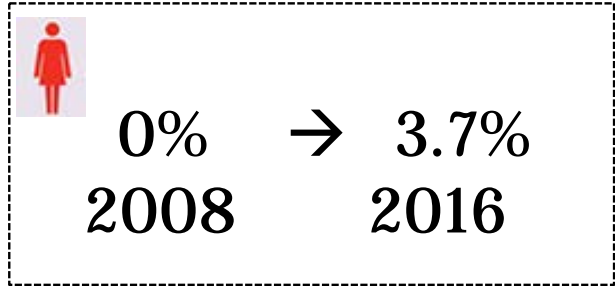
Number of male chairholders 1,218



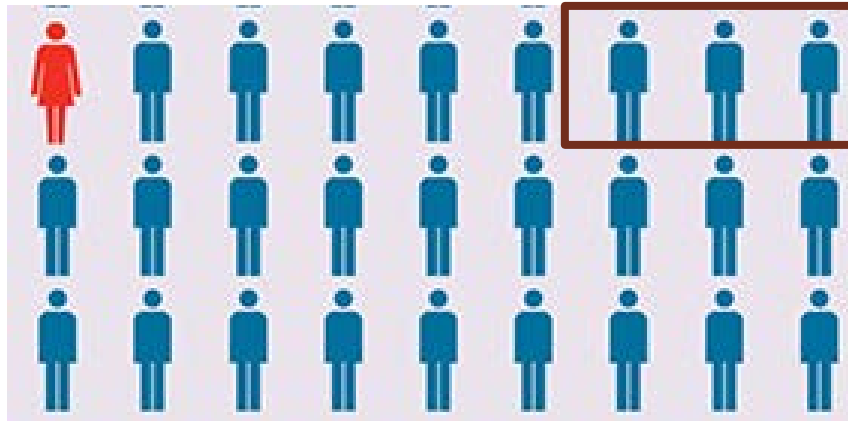
Source: Canada Research Chairs program

Moving forward: **Structural**

Canada Excellence Research Chairs



1/27



11%
other under-
represented
groups
[19% of Canadians]

Moving forward



University of Toronto has codified most aspects of best-practice for minimizing effects of bias

Policy is more effective if:

Individuals understand underlying issues

Leaders inspire a commitment to equity

Moving forward: **personal**



1. Consider (your own) implicit biases



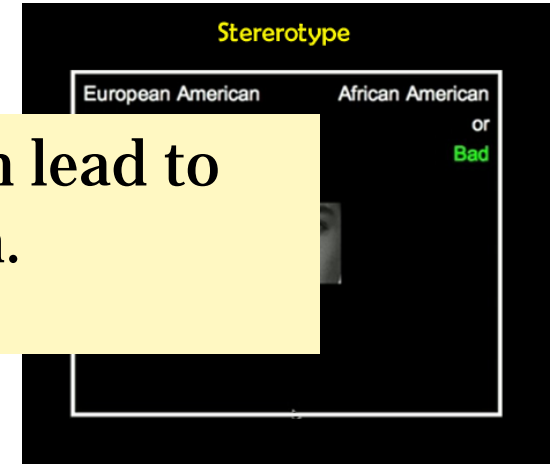
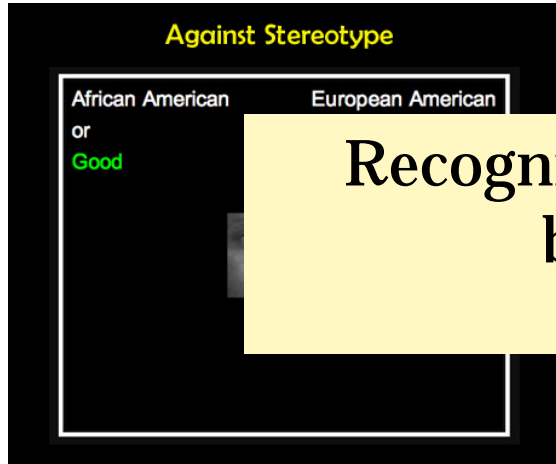
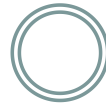
The screenshot shows the Project Implicit website interface. At the top center is the Project Implicit logo, which consists of a blue square containing a white silhouette of a person with an arrow pointing upwards. Below the logo is the text "Project Implicit®". To the right of the logo is a green book cover titled "BLIND SPOT" with the subtitle "The 2013 general audience book that fully explains the IAT". Below the logo and book cover are three main sections:

- PROJECT IMPLICIT SOCIAL ATTITUDES**: Log in or register to find out your implicit associations about race, gender, sexual orientation, and other topics! Below this is a form with an "E-mail Address" input field, a "LOGIN" button, and a "REGISTER" button.
- PROJECT IMPLICIT MENTAL HEALTH**: Find out your implicit associations about self-esteem, anxiety, alcohol, and other topics! Below this is a "GO!" button.
- PROJECT IMPLICIT FEATURED TASK**: Measure your implicit associations with U.S. presidential candidates. Below this is a "GO!" button.

Below the "PROJECT IMPLICIT SOCIAL ATTITUDES" section, there is a note: "Or, continue as a guest by selecting from our available language/nation demonstration sites:". Below this note is a dropdown menu showing a Canadian flag and the text "Canada (English, Français)" with a "GO!" button.

implicit.harvard.edu

Moving forward: **personal**



Recognizing unconscious bias can lead to behavioural compensation.
Green et al 2007

Strong implicit bias for **black**

No bias

Strong implicit bias for **white**

- 1.0

1.0

Here is your result:

Your data suggest a strong automatic preference for European Americans over African Americans.

Moving forward: **personal**



2. Source Monitoring (self/others)

Justification of judgements/ assessments

- Evidence-based
 - Specific, detailed facts
 - No: ‘reading between the lines’

Relate facts & judgements to explicit criteria

- Identified in advance
 - Beware of unspecified ‘fit’
 - Be vigilant to reconstruction of merit criteria (e.g., Uhlmann & Cohen 2005)
- Ensure sufficient time for careful decision-making
 - Rushing = stronger effect of biases (e.g., Beattie et al 2013)

Moving forward: **personal**



3. Recognize potential *signs* of bias (meetings/ letters)

- **Forms of address** (first names vs. titles)
 - “Jane was an asset to our department.”
 - –vs.– “Dr. Smith was an asset to our department.”
- **Gendered adjectives** (emotion/effort vs. outcomes)
 - “Dr. Sarah Gray is a caring, compassionate physician”
 - –vs.– Dr. Joel Gray has been very successful with his patients”

Moving forward: personal



3. Recognize potential *signs* of bias (meetings/ letters)

- Use of doubt raisers

“...***although*** labour challenges resulted **in *production delays***, the projects were completed on time...”

-vs.- “...labour challenges were ***overcome to ensure*** deadlines were met...”

- “...***although*** problems in the lab resulted in ***relatively few*** publications, her results are ***high-impact***...”

-vs.- “...he has ***overcome*** technical challenges to ***produce high-impact*** contributions...”

Moving forward: **personal**



3. Recognize potential *signs* of bias (meetings/ letters)

- **Querying attribution** of success to candidate vs. team/luck/others
- **Revealing or discussing irrelevant details:** race/gender/personal life

Moving forward



- Targets, monitoring
 - Diversified assessment groups
- Structural
- Education about bias
- Source monitoring
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- Personal

Useful resources:

<http://kirwaninstitute.osu.edu>

<http://wiseli.engr.wisc.edu>

<https://managingbias.fb.com>

