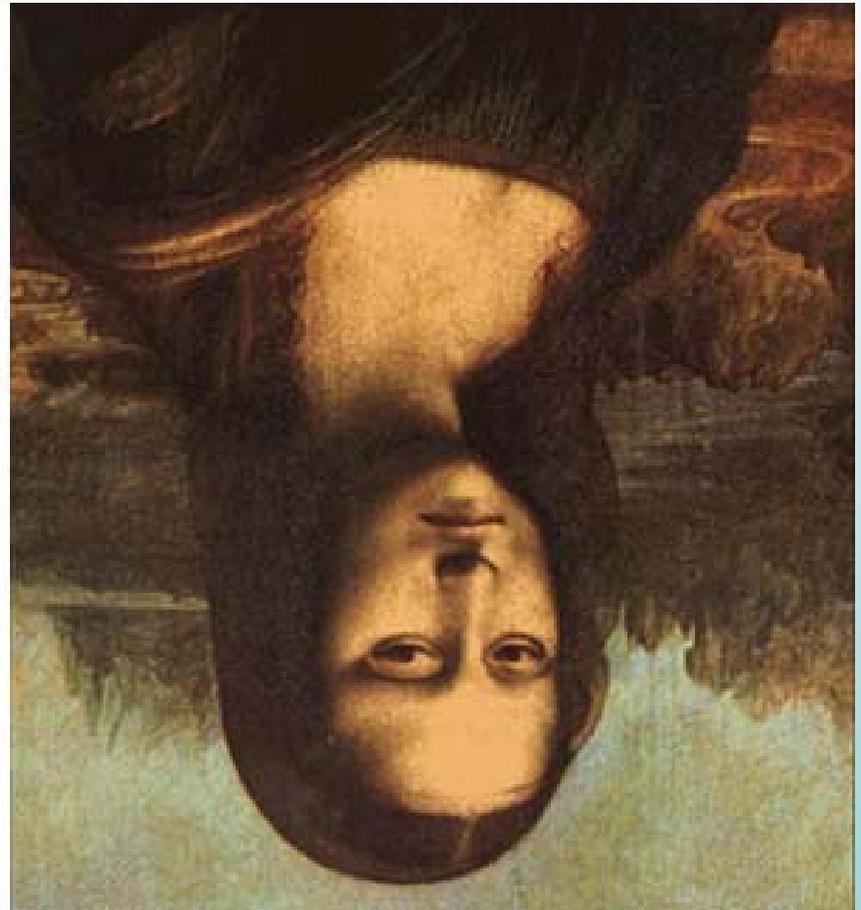


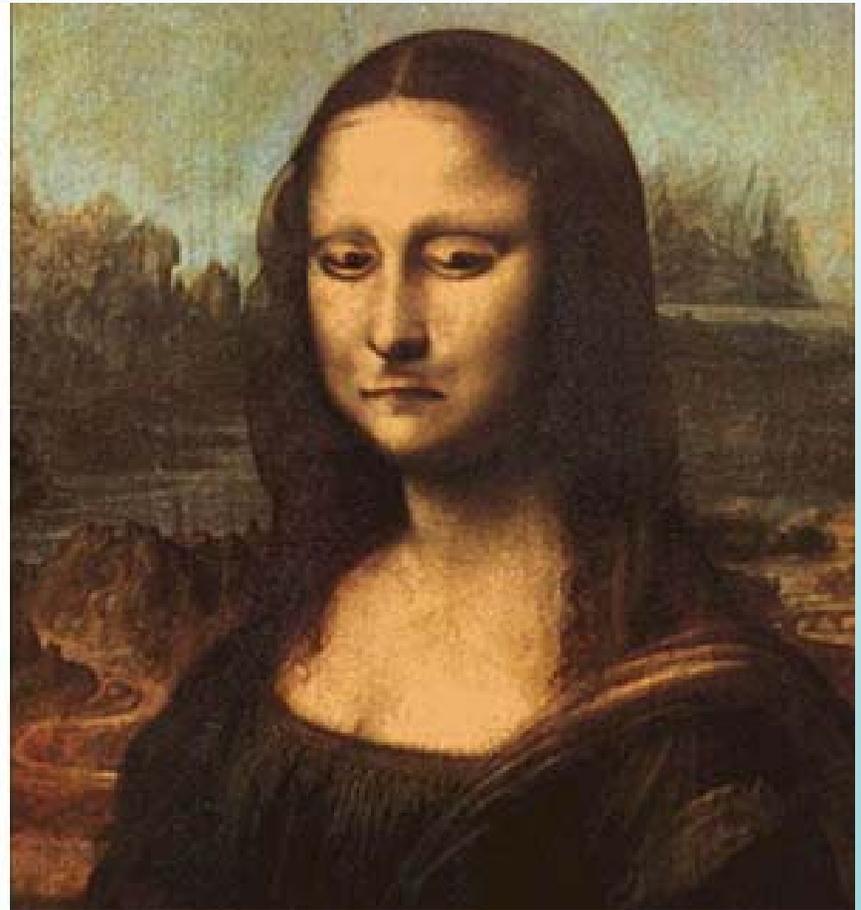
Mind bugs:
How implicit bias affects faculty evaluations in
academia

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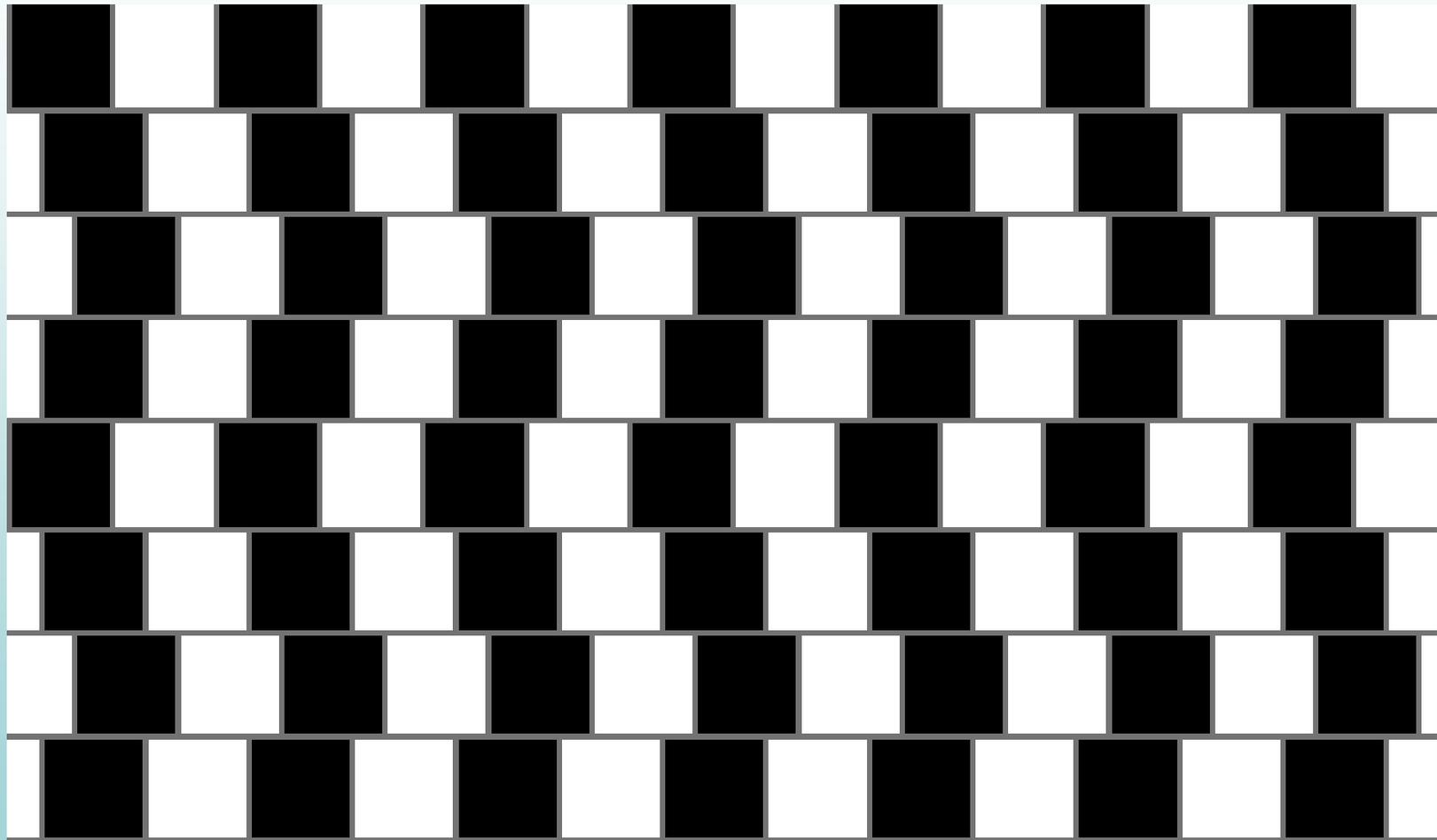
Same or different?



Mona Lisa right side up



Parallel or crooked?



Gregory & Heard, P. (1979, *Perception*).

Mind bugs are normal and ordinary

- The way we perceive, judge, and remember is often full of errors. Feeling confident \neq being accurate
- What we already know affects what we see. Preconceived expectations influence current judgments
- Mind bugs are ordinary because they are by-products of normal mental processes (memory, perception, learned associations)
- Ordinary because *all* of us are prone to these errors
- Ordinary because errors are unintentional, occur without awareness or control

Learned associations can produce mind bugs

- Some concepts automatically go together in our mind because we've learned these associations simply by being immersed in society
- E.g., learned association between color concepts and specific words. It's fast, automatic, requires no conscious thought

Name the colors

SLB

CFLTK

CFLTK

SPRND

HLMG

CFLTK

SLB

SPRND

SLB

SPRND

HLMG

CFLTK

HLMG

SPRND

CFLTK

Name the colors

RED

GREEN

YELLOW

BLUE

GREEN

BROWN

RED

YELLOW

BLUE

BROWN

BROWN

BLUE

YELLOW

GREEN

RED

Learned associations between particular professions and types of people: Think *science and engineering* - who pops into mind?



**Learned association is that the successful person
in science and engineering is...**

Male

Mostly White

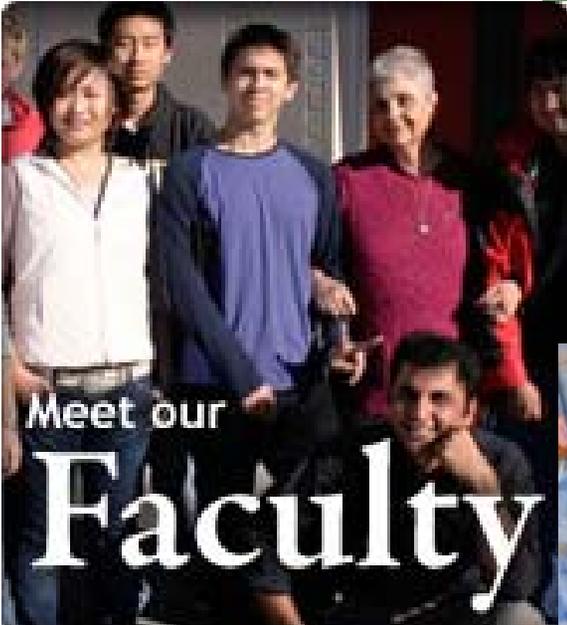
Sometimes Asian

Brainy

Nerdy

Geeky

Now think *humanities and arts* – who pops into mind?



**Learned association is that the successful person
in humanities & arts is...**

Often female

White

Sometimes Black and Latino

Artistic

Creative

Intuitive

These learned associations about successful academics are mind bugs

- Why? because they go beyond the most important quality—*talent*—and assume that successful academics in any field fit a narrow demographic and narrow personality type
- Learned associations are *implicit stereotypes* or *implicit bias*
- Implicit stereotypes are *not* harmless or inconsequential
- They are unspoken expectations that have important effects on personnel decisions in the academy. Examples from 3 domains.
 1. Hiring
 2. Promotions
 3. Individuals' own academic and professional choices

Hiring decisions

Implicit stereotypes unintentionally influence decision-makers' judgments about who is talented, likely to be successful, and worth hiring

Hire Greg Baker or Jamal Jones?

- Researchers sent out fake job applications in response to 1300 real professional jobs advertised in two major cities (Bertrand & Mullainathan, 2004)
- Resumes had candidate's education, qualifications, and work experience. Two versions of each resume; *identical* except name which implied race. E.g., Jamal Jones, Lakisha Washington, Greg Baker, Emily Walsh, etc.
- Who would receive more call-backs for job interviews? Results: Large race gap in call-backs. Greg and Emily received **50% more call-backs** than Jamal and Lakisha.
- Applicants with White names had to send out 10 resumes to get 1 call-back. Applicants with Black names had to send out 15 resumes to get 1 call-back
- Because all fake applicants had *identical* qualifications except for their alleged race, call-back difference were clearly driven by racial stereotypes.

Does implicit race bias in hiring disappear when job candidates are highly qualified?

- Varied resume quality: high quality resumes had more work experience, more skills, more honors and awards, less gaps in employment than lower quality resumes
- Results: Race bias in call-backs for job interviews was *bigger for high quality resumes*.
- For high quality resumes White candidates received 61% more call-backs than Black candidates. For low quality resumes Whites received 38% more call-backs than Blacks.
- Implicit race bias was steady across all occupations and industries. “Equal opportunity employers” discriminated as much as others that said nothing
- Decision-makers were probably totally unaware that their call-back decisions were biased. No reason to suspect deliberate bias.

Implicit bias in hiring is not limited to the US: A global phenomenon

Dear xxx,

My name is **Karl Johansson** and I am applying for the computer specialist position advertised by your company. I previously worked as a system designer at Telenor AB in an environment based on win2000/SQL Server.

My work involved development, maintenance, and everyday problem-solving for three different projects. Development work was done in ASP, C++, and Visual Basic, and I used the development platform .Net and MS SQL. I also have experience in HTML, XML, J2EE, and JavaScript.

...

...

I look forward to being invited for an interview and will be happy to provide my certificates and diplomas.

Best regards,
Karl Johansson

Same job application letter; different name

Dear xxx,

My name is **Mohammad Said** and I am applying for the computer specialist position advertised by your company. I previously worked as a system designer at Telenor AB in an environment based on win2000/SQL Server.

My work involved development, maintenance, and everyday problem-solving for three different projects. Development work was done in ASP, C++, and Visual Basic, and I used the development platform .Net and MS SQL. I also have experience in HTML, XML, J2EE, and JavaScript.

...

...

I look forward to being invited for an interview and will be happy to provide my certificates and diplomas.

Best regards,

Mohammad Said

Will the name of the applicant and his implied ethnicity and religion influence call-backs for job interviews?

(Rooth, 2009)

- Sent applications to ~1500 job postings in Sweden in IT, business sales, teaching, accounting, nursing, construction, retail.
- Every job posting received 2 resumes that were virtually identical except for the applicant's name: native Swedish name or Muslim name.
- Later, contacted the same HR professionals; measured their implicit attitudes toward Muslims vs. native Swedes using Implicit Association Test (IAT).
- HR professionals who showed more implicit bias against Muslims were less likely to call back candidates with Muslim names for job interviews.
- Every 1 unit increase in implicit bias on the IAT produced 5% lower call-back rate for Muslim job applicants.

Closer to home: Does implicit bias influence academic hires at universities?

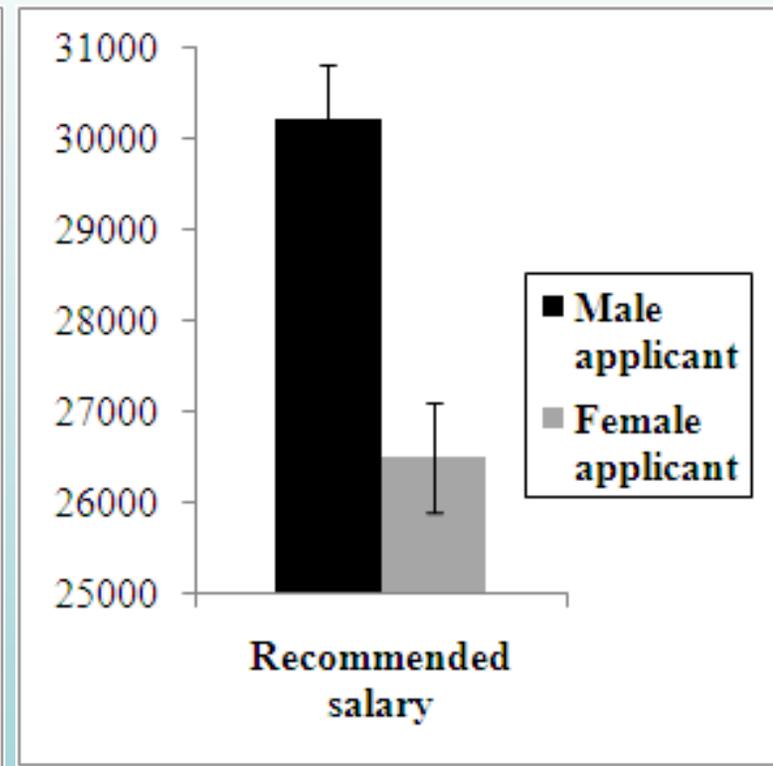
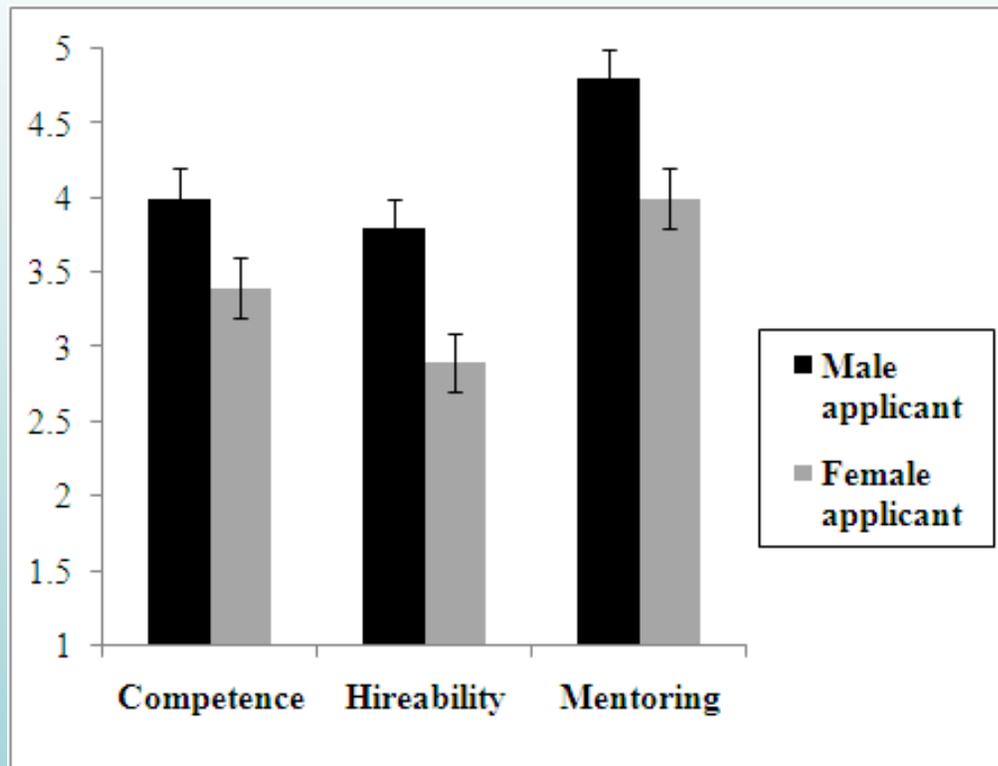
- Faculty jobs require more qualifications; smaller applicant pool; faculty are invested in making good hires for their depts. Is implicit bias less likely?
- Faculty at research universities asked to evaluate a candidate for a junior faculty position. Received a CV of a person whose name was Karen Miller or Brian Miller (Steinpreis et al., 1999)
- Asked: (1) Would you hire this job candidate? (2) Does the candidate's research productivity, teaching & service record meet expectations for hire?
- More faculty recommended hiring the male than female candidate. More satisfied with his research, teaching, and service than hers – although *CVs were identical*. Unaware of own bias.
- *Both* male and female faculty evaluators showed implicit gender bias in hiring.

Implicit gender bias is more likely in academic disciplines with small % of women

- In academic fields where there are very few women (science, engineering), stereotype of success becomes very male-oriented. Successful scientists = male
- Individuals who don't fit the stereotypic profile have hard time getting entry-level jobs that will make them competitive for future positions.
- Hypothesis tested in recent study: Science faculty at research universities asked to evaluate a candidate applying to be a lab manager in their discipline based on the person's CV.
- Evaluated the candidate's competence, hireability, reported how much career mentoring they were willing to offer, and recommended a starting salary.
- Faculty received the same CV with a male or female name.

STEM faculty members' evaluations of male vs. female job candidates for lab manager

Moss-Racusin et al. (2012), *Proceedings of the National Academy of Science*



12% salary gap favoring male applicant

This type of hiring bias in early stages of training increases attrition and contributes to the lower availability of women at more advanced stages of the profession (“pipeline problem”)

**If applicants' qualifications are identical, and
if decision-makers are well-meaning...**

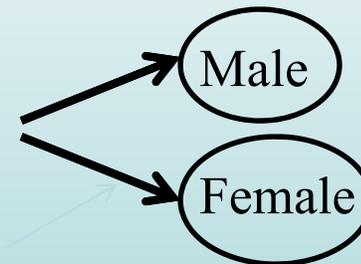
**What goes wrong in the decision-making
process that skews the outcome?**

Answer: Implicit stereotypes shift definition of merit

- Even when two candidates have the same record one may be hired over another because different merit criteria get emphasized or de-emphasized depending on the candidate and his/her fit with stereotype of success
- E.g., Hiring for a Chief of Police. A few finalists. Each has some strengths and some weaknesses.

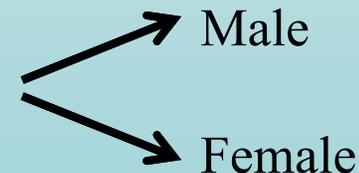
Candidate 1:

Strong law enforcement education & admin. skills
But less street experience



Candidate 2:

Lots of street experience
But less law enforcement education & admin. skills

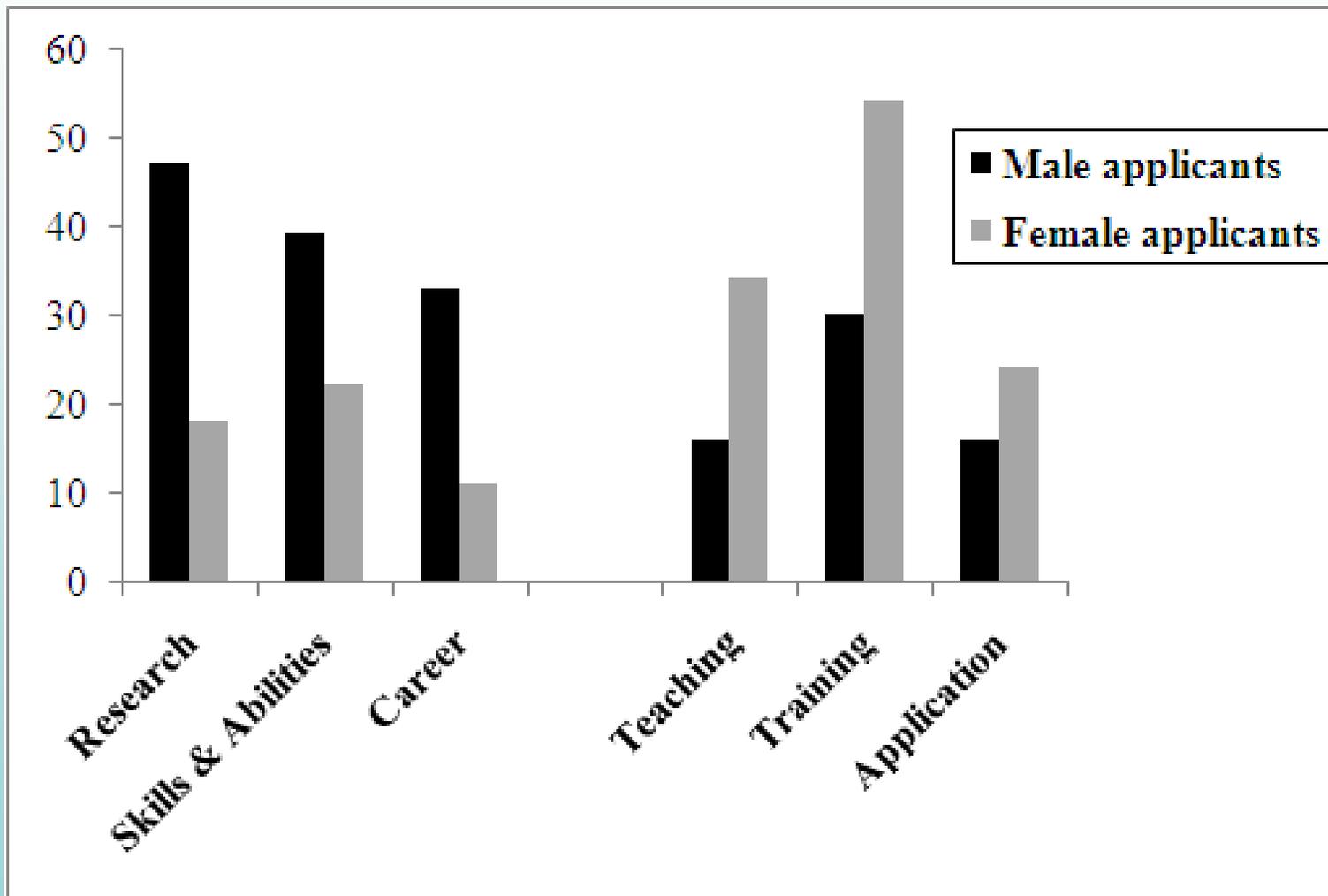


- Who would you hire? What type of skill is most important for this job? How objective were you in making this decision? (Uhlmann & Cohen, 2005)

Shifting definitions of merit: Implicit stereotypes affect what qualities get emphasized in recommendation letters for faculty

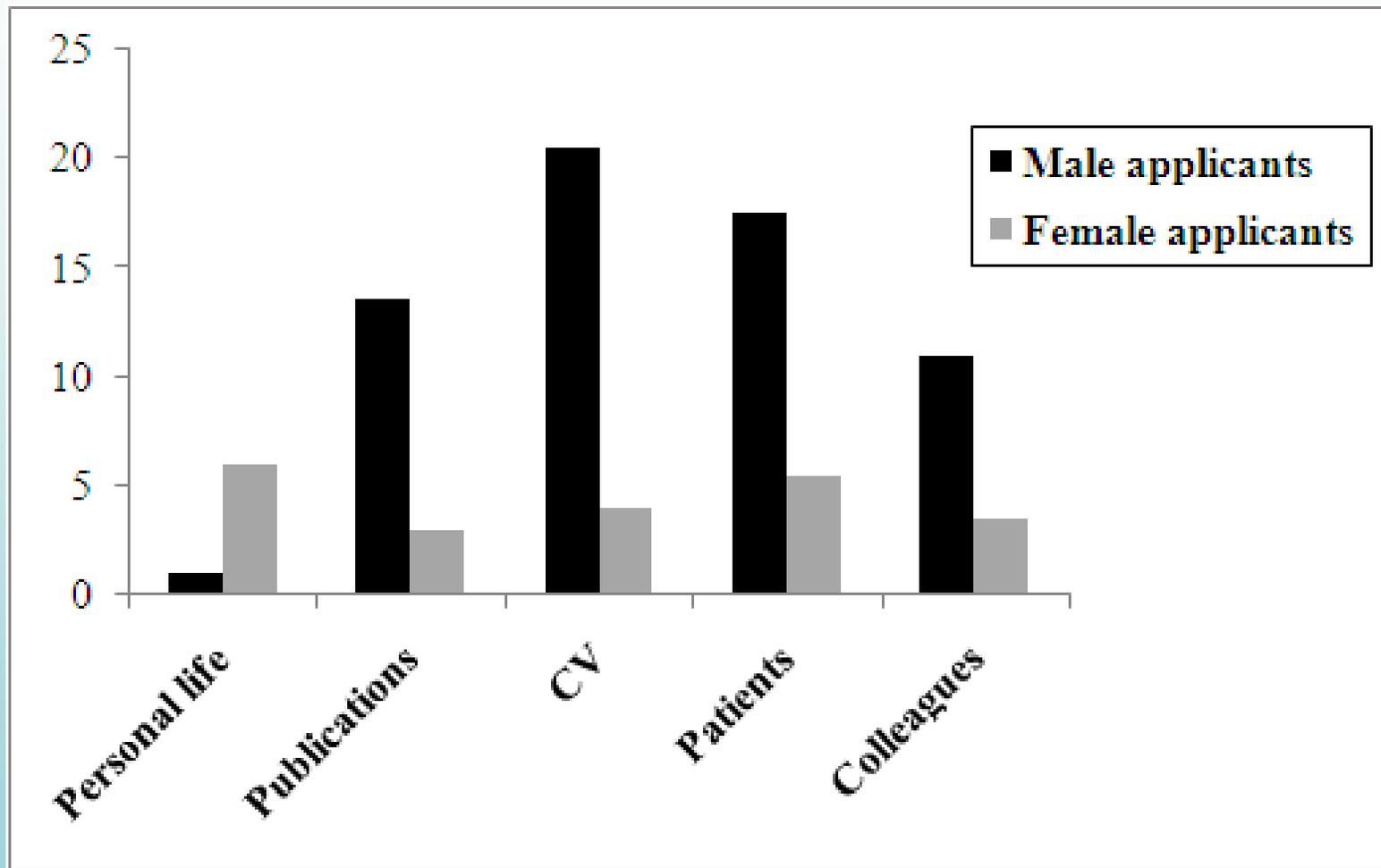
- Recommendation letters for faculty applicants emphasize multiple strengths—e.g., research, teaching, service, or personal qualities.
- Gender of applicant influences what their letter-writers emphasize in recommendation letters
- Analyzed content of recommendation letters written for 312 applicants applying for faculty positions at medical schools (Trix & Psenka, 2003)
- 71% of letters were for male applicants; 29% for female applicants. Most letter-writers were male (85%).

Mention of applicants' research vs. teaching in recommendation letters for faculty positions



(Trix & Psenka, 2003)

Mention of applicants' research vs. personal life in same recommendation letters



(Trix & Psenka, 2003)

More gender differences in recommendation letters

- 24% of letters for women raised some doubt vs. 12% of letters for men raised doubt. E.g., hedges, faint praise, ambiguous sentences, too much personal information, negative statements.
- Traits related to competence (e.g., success, accomplishment, achievement) were mentioned more often in male vs. female applicants' letters.
- Traits related to interpersonal warmth (e.g., compassion, relates well to patients and staff) were mentioned more in female vs. male applicants' letters.
- Letters for female applicants were significantly shorter than those for male candidates.

Implicit bias in promotion decisions

Gender bias in promotion decisions

- Strong expectation that women should be warm and likeable. No such expectations for men. Women who violate the warmth stereotype are not liked.
- Low warmth hurts women's chances of promotions and professional rewards but it doesn't affect men's promotions and rewards (Heilman et al, 2004; Rudman & Glick, 2001).
- For women to be successful they have to be highly competent and also *more warm and likeable* than their male colleagues. Competence by itself is not enough for success

Take home points (so far)

- Implicit stereotypes about the “ideal” successful person in a given profession act as an invisible lens that affects how...
 - Job candidates are evaluated during hiring
 - Recommendation letters are written
 - Promotion decisions are made
- Evaluators implicitly favor candidates who fit the success stereotype in a given profession over others with *same qualifications* who don't fit that stereotype.
- Definition of merit changes depending on who is being evaluated. If a candidate fits the success stereotype, their strengths are emphasized and weaknesses downplayed. Opposite happens if they don't fit the stereotype
- Evaluators are often not aware of their own bias. People who think they are objective may be more prone to bias than others aware of their own subjectivity.
- Implicit stereotypes affect personnel decisions regardless of the evaluator's own group membership.

**Implicit stereotypes affect people's
own academic and professional
choices**

Implicit stereotypes shape individuals' choices about what path to pursue (or avoid)

- We assume academic and professional decisions are *free choices* driven purely by talent and ability; unconstrained by societal forces
- My research shows these choices are not free. Heavily constrained by feelings of belonging or fitting in (Dasgupta, 2011; Stout, Dasgupta et al., 2011)
- Humans beings are social animals. Choice to pursue a given professional path = Ability + belonging.
- Feelings of belonging in an academic/professional world increases when individuals see people like themselves in a given setting.

How implicit stereotypes affect women in STEM

- Recruited students from calculus class. Required for all STEM majors. Followed them through semester.
- Multiple sections taught by different professors (male or female). Students pre-registered for a section without knowing who their professor would be.
- Tested whether the gender of the calculus professor would affect students' academic engagement.
- Female students who had male professors showed less liking for math, less confidence in ability, and less identification with the subject.
- In contrast, female students who had female professors showed increased liking for math, more confidence in their ability, and more identification.
- For students who are underrepresented in a field, the absence of expert role models from their group depletes motivation and increases attrition

**We've spent a lot of time identifying
problems of implicit bias**

What are some solutions?

How to prevent implicit bias from affecting *women and minorities' choice of majors and careers*

1. For individuals who are numeric minorities in a field, increase their exposure to successful experts in that field who are members of their group.
2. Personalize these experts so that individuals can identify with them. Don't portray experts as "superstars" whose success is unattainable.
3. Peer mentoring: Encourage mentoring relationships between newcomers and advanced peers in the same field from their ingroup.
4. Consider the timing of interventions: Most important in early years of training

In sum, increasing visibility of ingroup role models and peers strengthens women and minorities' sense of belonging in the field. Makes own success seem more attainable

Finally, six ways to prevent implicit bias from affecting *hiring & promotion*

1. Whenever possible evaluate job applications after masking candidates' race, gender, or other group membership (Goldin & Rouse, 2000)
2. Ask evaluators to commit to specific merit criteria and rank order their importance before reviewing applications (Uhlmann & Cohen, 2005).
3. Reduce time pressure and distraction while making personnel decisions (Bertrand et al., 2005; Martell, 1991; Sczesny & Kuhnen, 2004).
4. Use structured interviews with standardized questions for hiring instead of unstructured conversation (Bragger et al., 2002)
5. Use gender-neutral job titles not masculine titles (e.g., chair not chairman). Masculine job titles activate masculine stereotypes (McConnell & Fazio, 1996)
6. Finally, use same criteria in all recommendation letters. Emphasize applicant's *competence* in research, teaching, service. Compare your letters.

Thanks!

For research see:

<http://people.umass.edu/nd/index.html>

Research funded by:

National Science Foundation CAREER award (BCS 0547967)

National Science Foundation (GSE 1132651)