

## The Influence of Unconscious Bias

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### *Research*

Several research studies have demonstrated that implicit biases and assumptions can affect evaluation and hiring of candidates for academic positions. These studies show that the gender and ethnicity of the person being evaluated significantly influences the assessment of resumes and postdoctoral applications, evaluation of journal articles, and the language and structure of letters of recommendation.

- Trix & Penska (2003) *Discourse and Society*
  - Content analysis of 312 LOR for medical faculty hired by a large American medical school found that letters for female applicants differed systematically from those for males.
  - Letters for women
    - Were shorter
    - More likely to lack specificity
    - Provided minimal assurance rather than solid recommendations
    - Raised more doubts, e.g. criticisms, hedges, faint praise
    - Included fewer superlative adjectives
    - More likely to contain gender terms, e.g. “she is an intelligent young lady”
- Steinpreis RE, Anders KA, Ritzke D. The impact of gender on the review of the curricula vitae of job applicants and tenure candidates: A national empirical study
  - N = 238 academic psychologists (118 males, 120 females) evaluated a junior-level or senior-level CV randomly assigned a male or a female name. These were actually CV from an academic psychologist who successfully competed for an assistant professorship and then received tenure early.
  - For the junior-level applicant, both male and female evaluators gave the male applicant better ratings for teaching, research, and service and were more likely to hire the male than the female applicant.
  - Gender did not influence evaluator’s decisions to tenure the senior-level applicant, but evaluators did voice more doubts about the female applicant’s qualifications.
- Wenneras C, Wold A. Nepotism and sexism in peer-review. *Nature* 1997; 387. Study of postdoctoral fellowships awarded by the Medical Research Council of Sweden found that women candidates
  - Graded below men in all 3 categories of scientific achievement
  - Needed substantially more publications to achieve the same rating as men, unless they personally knew someone on the selection panel.
  - Had to be 2.5 times more productive than the average male applicant to receive the same competence score
  - Regression analysis → positive impacts of being male and of being affiliated with a member of the review committee exceeded the influence of measures of scientific impact and productivity by 52%-220%
- Study (2008) showed that when the journal *Behavioral Ecology* introduced a double-blind review process that concealed the identities of the reviewers and authors, there was a significant increase in the publication of articles with a woman as the first author.

- Moss-Racusin CA, Dovidio JF, Brescoll VL, Graham MJ, Handelsmen J. Science faculty's subtle gender biases favor male students. PNAS 2012
  - N = 127 professors in biology, physics, or chemistry
  - Identical applications for a lab manager position from "male" vs. "female" applicants
  - Male and female faculty evaluators did not differ in degree of bias
  - "Male" applicants were offered ~\$35K more/year in salary
- Bertrand & Mullainathan (2003), American Economic Review
  - Fictitious resumes (altered from actual ones found on job search websites) were submitted to "help-wanted ads" in Boston and Chicago newspapers
  - Resumes were categorized as "high" or "low" quality → assigned half of each category to either traditionally Black names, e.g. Lakisha, or traditionally White names, e.g. Greg
  - Results:
    - Resumes with White names had a 50% greater chance of receiving a call-back than did resumes with Black names (10.8% vs. 6.7%)
    - High-quality resumes elicited 30% more call-backs for Whites, but only 9% more call-backs for Blacks
    - Employers who listed "EEO Employer" in their ad discriminated just as much as other employers.
- Ginther et al (2011), Science. Apparent racial bias in grant proposal evaluation.
  - Analyzed the association between NIH R01 applicant's self-identified race/ethnicity and the probability of receiving an award
  - After controlling for the applicant's educational background, country of origin, training, previous research awards, publication record, and employer characteristics, African-American applicants are 10% less likely than Whites to be awarded NIH funding.
- Goldin C, Rouse C. Orchestrating impartiality: The impact of "blind" auditions on female musicians. National Bureau of Economic Research 1997; Working Paper #5903.
  - Rationale: Prior to 1970, only 5% of musicians within premier U.S. orchestras were women; most orchestras made their audition practices more open from 1970's to 1980's; over time, orchestras gradually introduced screens separating auditioning musicians from their evaluators
  - Analyzed data from over 1000 auditions – did the use of the screen improve success of women? The hiring of women was in parity with the hiring of women when evaluators were blinded, and significantly lower when the evaluators were not blinded.
- Correll, Bernard, Paik (2007), Am J Sociology
  - Participants rated fictitious job applicants by reading constructed resumes → resumes were statistically matched, except for one listed activity: Parent-Teacher Association Coordinator; fundraiser for neighborhood association
  - Applicants were rated for competency, commitment and likely starting salary
  - Female applicants perceived as mothers were judged significantly less competent and committed, worthy of 7% less starting salary, and were held to more stringent hiring standards, e.g. higher test scores.
- Gutierrez y Muhs G, Flores Niemann Y, Gonzalez CG, Harris AP (2012), University Press of Colorado. Presumed incompetent: The intersection of race and class for women in academia
  - Women from underrepresented groups often experience a "double bind"
  - Disproportionate scrutiny from students, peers and administrators
  - Assumptions that success was obtained through affirmative action
  - Being viewed as a representative of their race ("tokenism")

- Feelings of difference and isolation
- Heavier burden of informal mentoring and community engagement
- Weaker professional support

### ***Some additional things we know about implicit biases...***

- They impede objectivity → our evaluations are influenced by context and prior expectations
- Few people recognize their own patterns of bias
- Those who rate their own objectivity highly are *more* prone to the effects of unconscious bias
- They are ubiquitous and pervasive
  - *Errors in perception* (“mindbugs”) lead to perceptual bias
    - The way we perceive, judge, remember is often full of errors
    - What we already know affects what we perceive
    - Preconceived expectations influence current judgments
    - “Mindbugs” are ordinary byproducts of normal mental processes, e.g. memory, perception, learned associations
  - Common unconscious biases are associated with
    - Gender and gender “schemas”
    - Race/ethnicity/cultural variation
    - Family status...etc.
- Implicit bias is often driven by learned associations
  - Some concepts automatically go together in our mind because we’ve learned these associations simply by being immersed in society
  - Knowledge of bias patterns can reduce its impacts
- Implicit biases have pervasive effects on behavior
  - Measured association biases (IAT) predict:
    - Rate of call-back for interviews (Rooth, 2007)
    - Awkward body language and feelings of discomfort (McConnell & Liebold, 2001)
    - How we read the friendliness of facial expressions (Hugenberg & Bodenhausen, 2003)
    - More negative evaluations of ambiguous actions by African Americans (Rudman & Lee, 2003)
    - More negative evaluations of agentic (e.g. confident, aggressive, ambitious) women in hiring conditions (Rudman & Glick, 2001)