



W I S E L I

*Women in Science & Engineering Leadership Institute*  
*University of Wisconsin-Madison*

# Unconscious Bias and Assumptions

## Implications for Evaluating Women and Minorities at Critical Career Junctures



# Evaluation in the academic career

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- Hiring
- Tenure
- Awards & Honors
- Leadership
- Grant, paper reviews
  
- Important consequences: career persistence, resource allocation, achievement/productivity



## Evaluation in the academic career

- We want to be fair and unbiased....*but are we?*



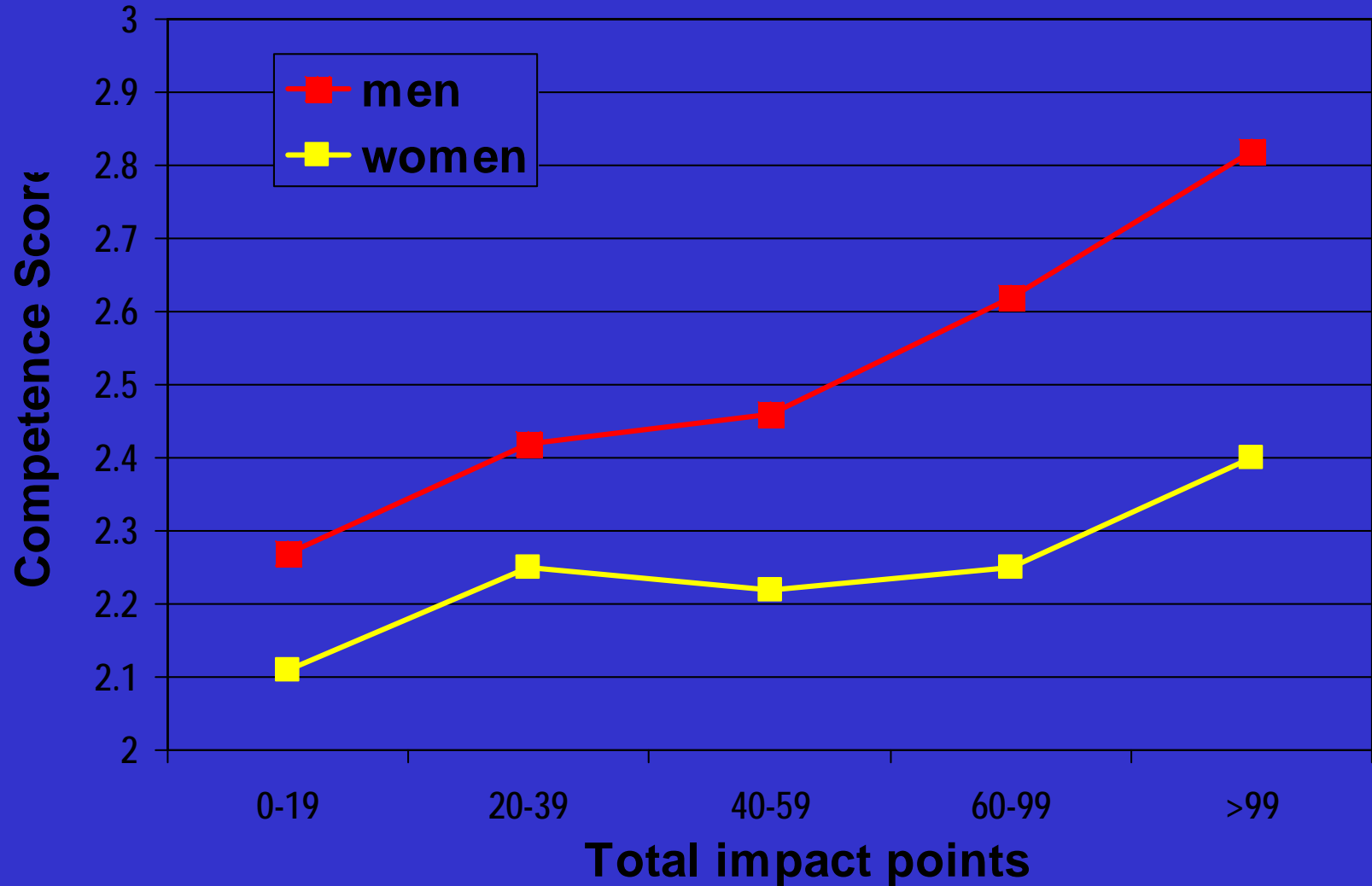
*“The fact that women are capable of contributing to the nation’s scientific and engineering enterprise but are impeded in doing so because of gender and racial/ethnic bias and outmoded “rules” governing academic success is deeply troubling and embarrassing. It is also a call to action.”*



## Wennerås and Wold, 1997

- Reviewed 114 applications for prestigious research postdocs to Swedish MRC (52 women)
- Compared reviewers' “**competency rating**” scores to a standardized metric derived from publication record (**impact points**)
- MRC reviewers consistently gave women lower competency ratings than men, and competency ratings lower than would be predicted by impact points.
- Males competency ratings increased with their publication record – women's competency ratings did not
- To even the score, women needed the equivalent of 3 extra papers in a prestigious journal like *Science* or *Nature*

# Wennerås and Wold, *Nature*, 1997





# Unconscious biases and assumptions

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- What is “unconscious bias”?
- How might unconscious biases affect the evaluation of individuals?
- How can those doing the evaluation overcome these tendencies?



# What is “unconscious bias”

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- Unconscious bias and assumptions
- Schemas
- Stereotyping
- Cognitive shortcuts
- Statistical discrimination
- Implicit associations

The tendency of our minds to judge *individuals* based on characteristics (real or imagined) of *groups*





# Unconscious bias

- When shown photographs of people who are the same height, evaluators overestimated the heights of male subjects and underestimated the heights of female subjects.
- When shown photographs of men of similar athletic ability, evaluators rated the athletic ability of African American men higher than that of white men.
- When asked to rate the quality of verbal skills indicated by a short text, evaluators rated the skills as lower if they were told an African American wrote the text than if they were told a white person wrote it, and gave higher ratings when told a woman wrote it than when told a man wrote it.



# Unconscious bias at critical career junctures

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- Applications/CVs/Résumés
- Reference Letters
- Evaluation of Leadership Ability/Skill



## Applications/CVs/Résumés

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- 238 academic psychologists sent a curricula vitae with either male or female name
  - Entry level: more likely to vote to hire man, more likely to indicate man had adequate teaching, research, and service experience
  - High level: no gender differences
  - No differences between male and female evaluators
  - More write-in comments for women



# Applications/CVs/Résumés

- Resumes of differing quality are randomly assigned white-sounding or African American-sounding names
  - Mailed in response to actual job ads in Chicago, Boston. Callbacks are measured.
    - White names are 50% more likely to be called back.
    - White names with high quality resume are 27% more likely to be called back (compared to whites with low quality), but Black names with high quality resume are only 8% more likely to be called back. (Less return to labor market experience for blacks.)
    - Neighborhood, job/employer characteristics not significant

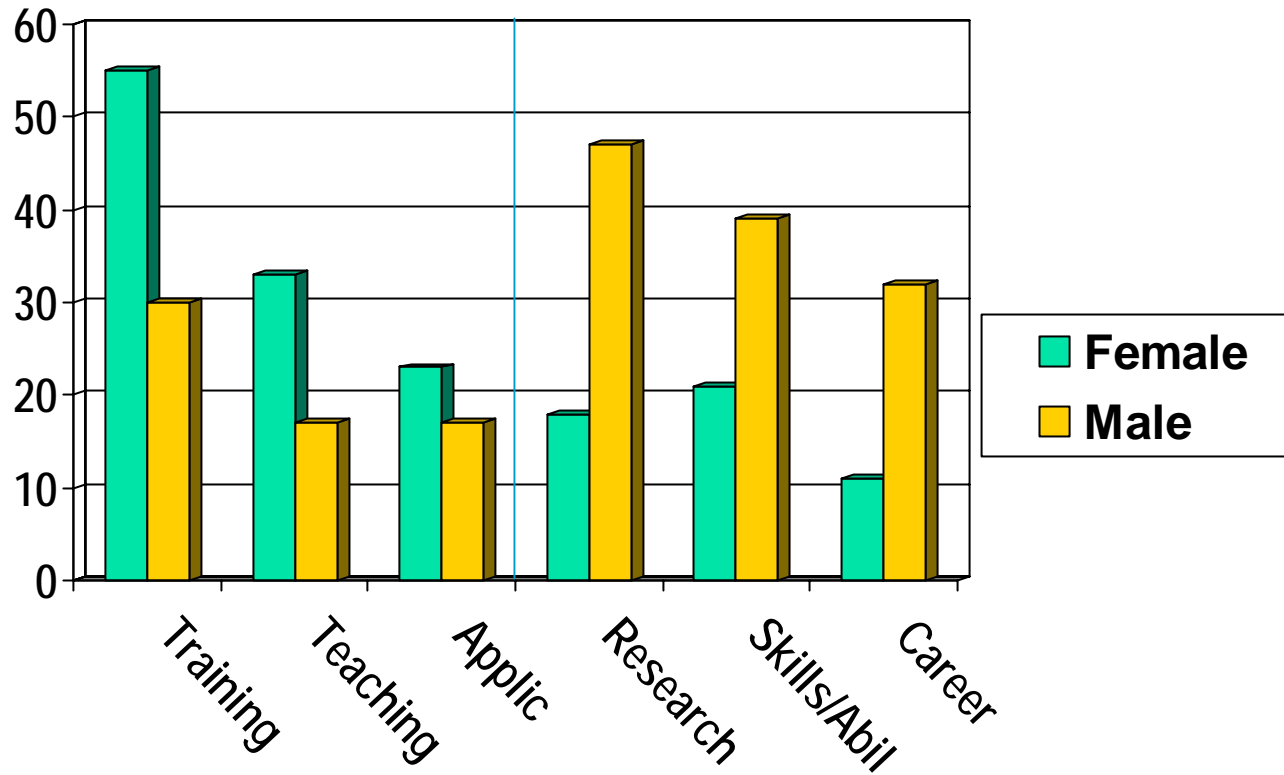


## Letters of reference

- 312 letters of recommendation for medical faculty hired at a large U.S. medical school
- Women's letters compared to men's more often:
  - Were *shorter*
  - Offered *minimal assurance*
  - Used *gender terms*
  - Contained *doubt raisers*
  - Used *stereotypic adjectives*
  - Used *grindstone adjectives*
  - Used fewer *standout adjectives*
  - Contained less *scientific terminology*

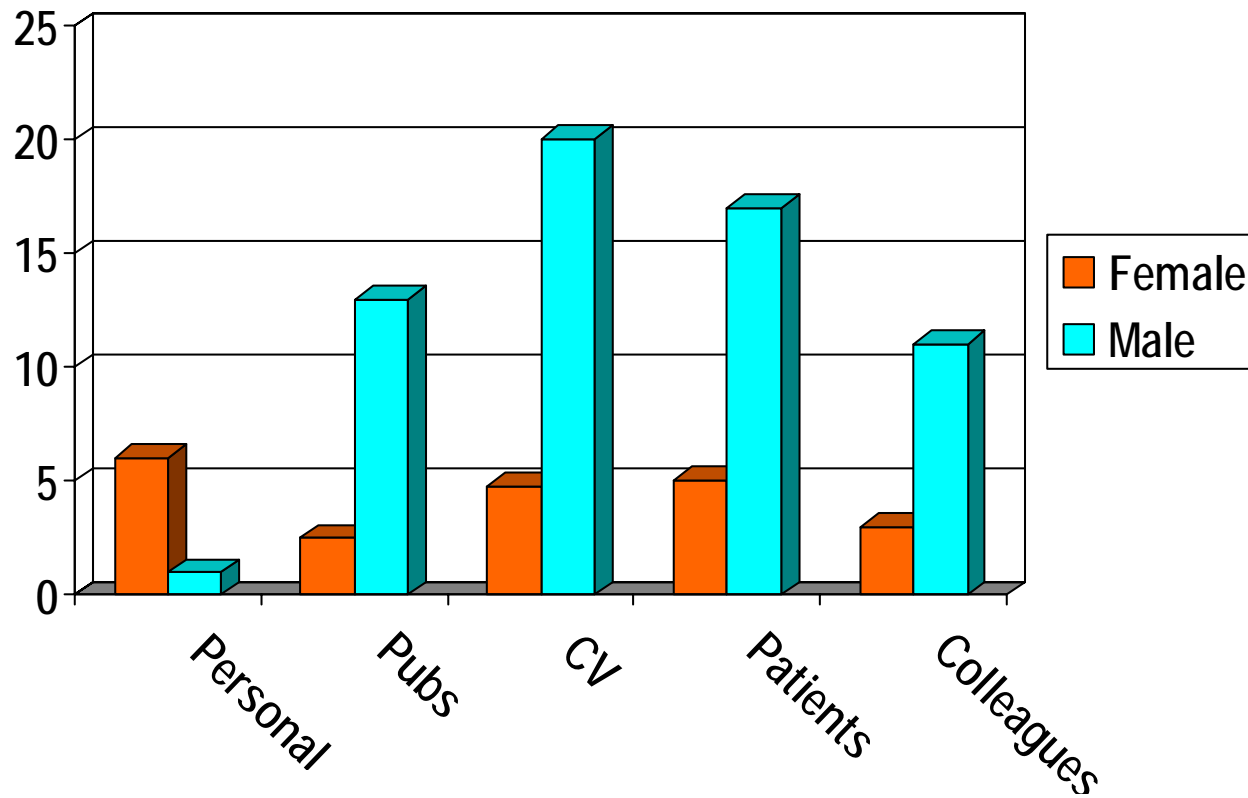


# Top 3 semantic realms following the possessive for men and for women





# Distinctive semantic realms following the possessive





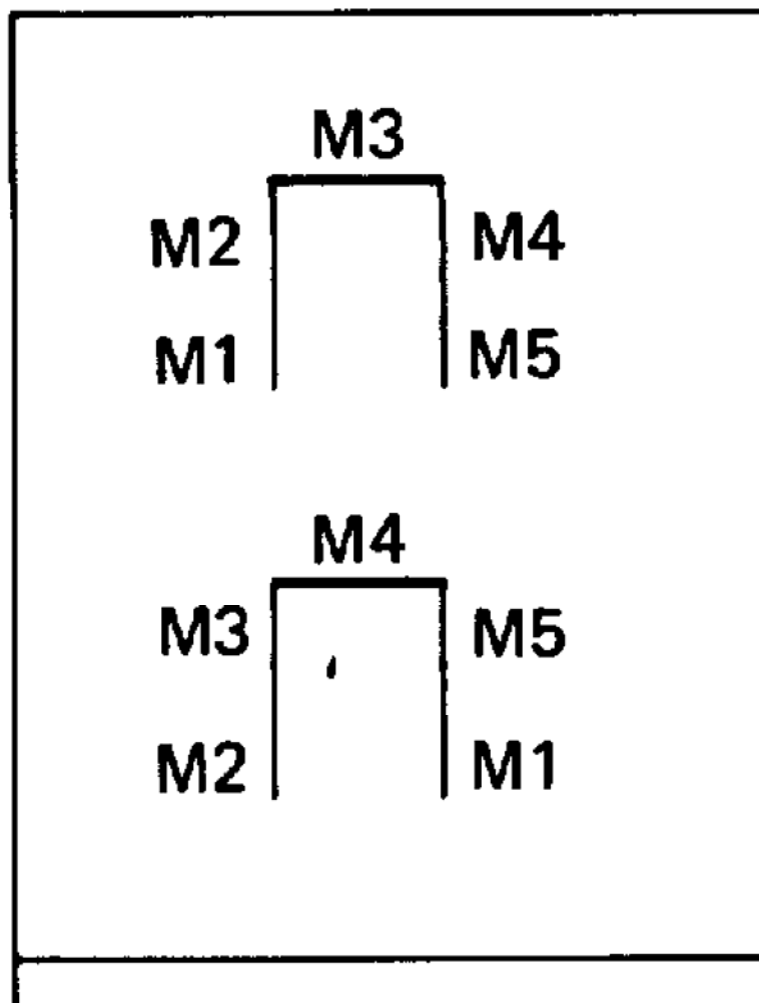
## Evaluation of leadership

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- Students seated around the table—when is the head of the table identified as the “leader?”

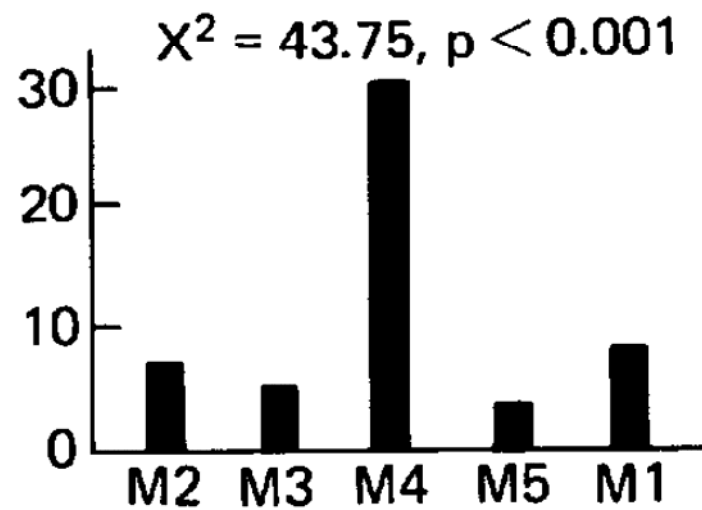
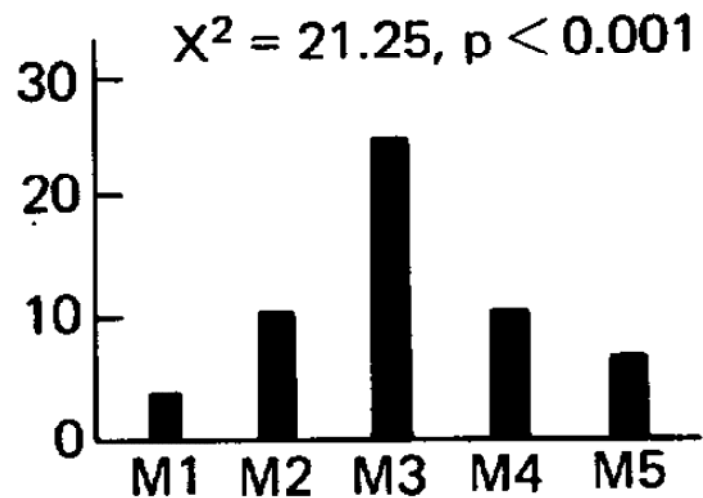


### MALE

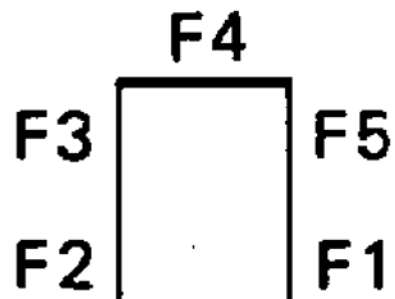
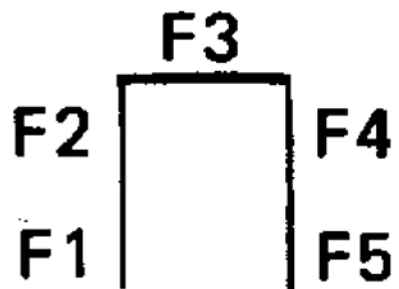


### MALE

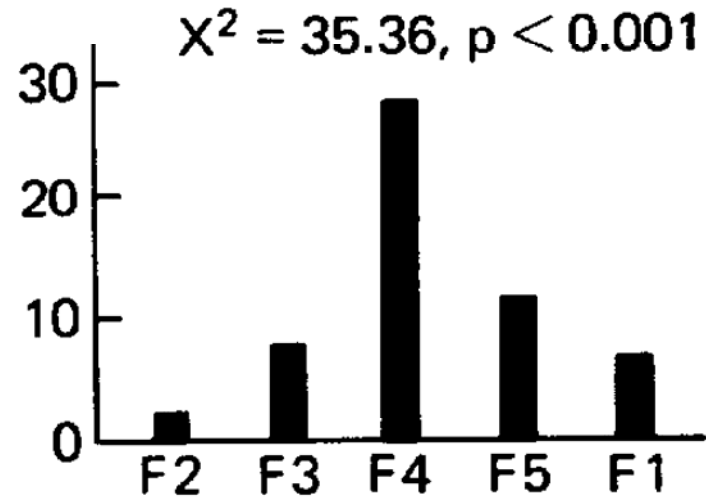
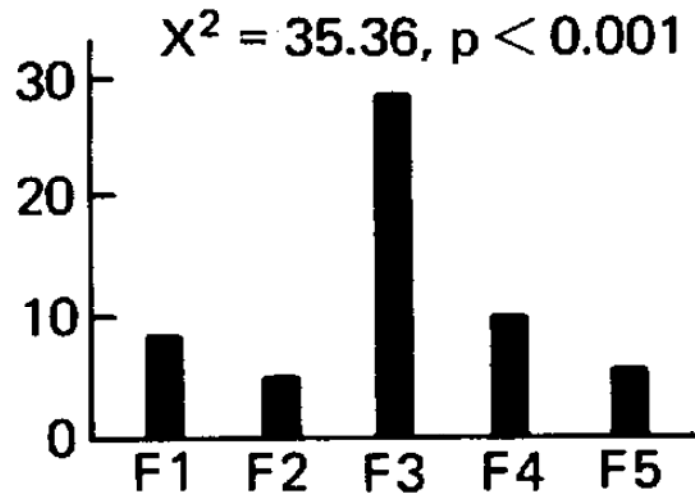
SAME-SEX STIMULUS GROUPS

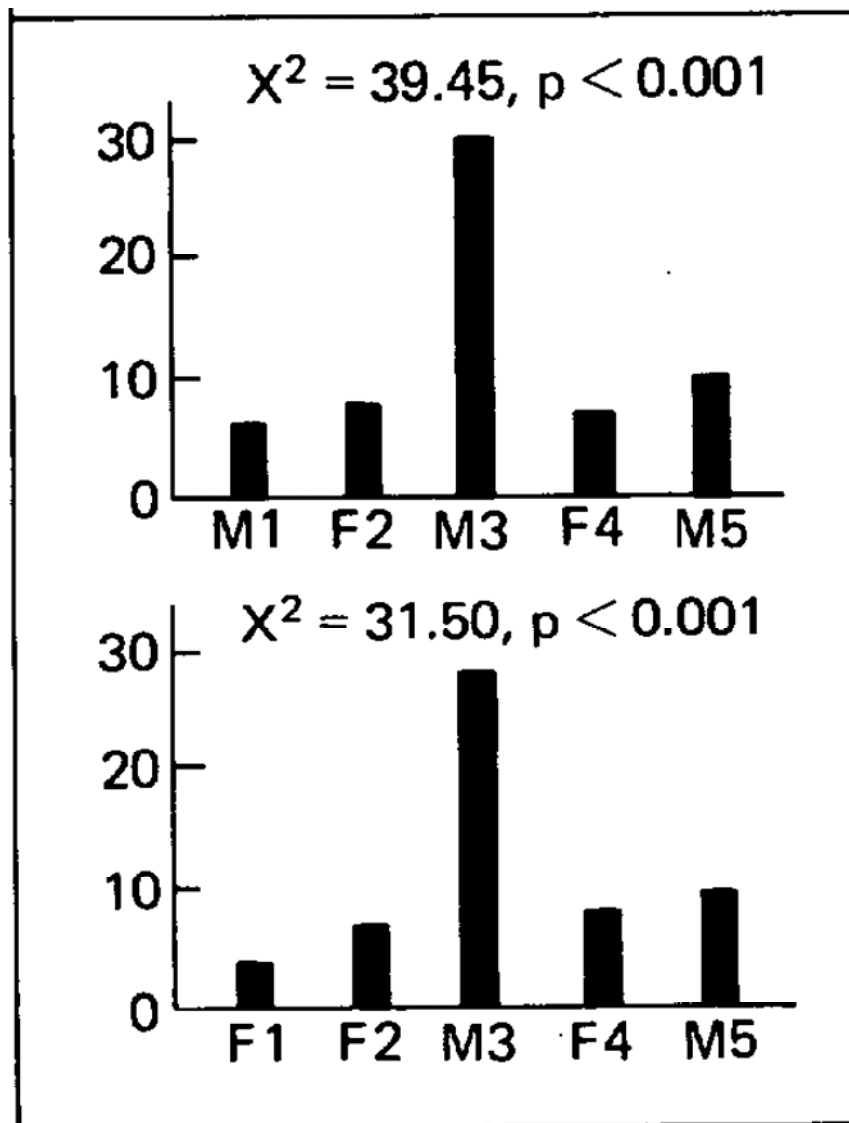
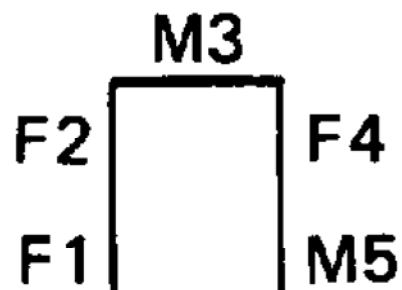
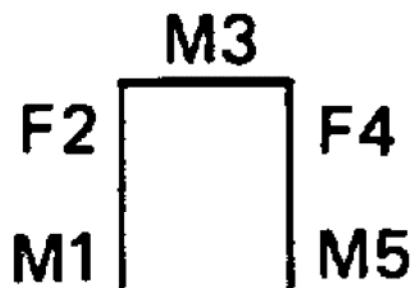


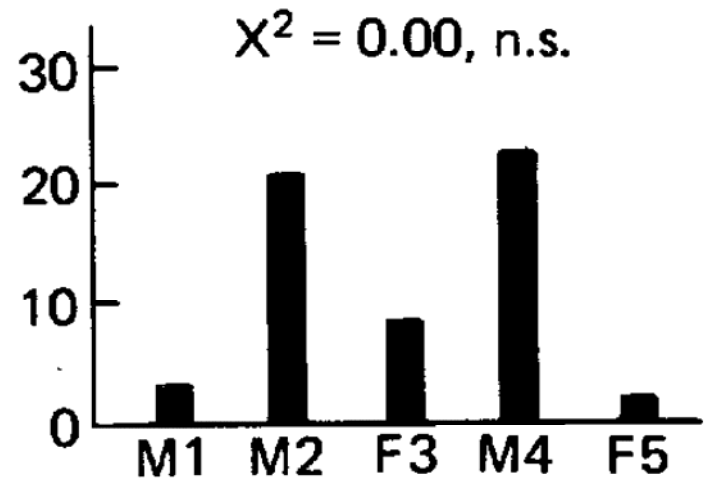
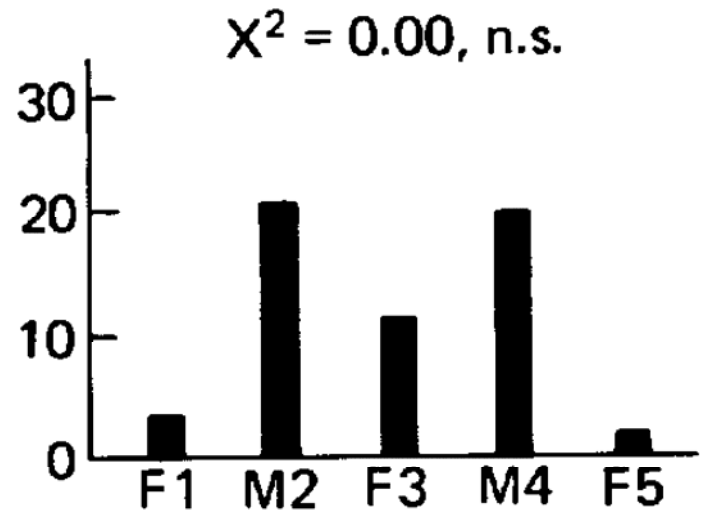
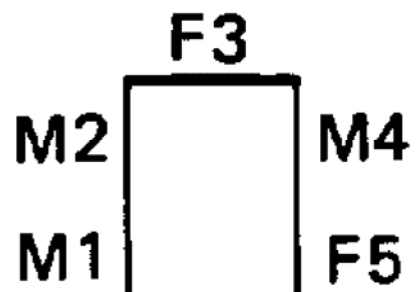
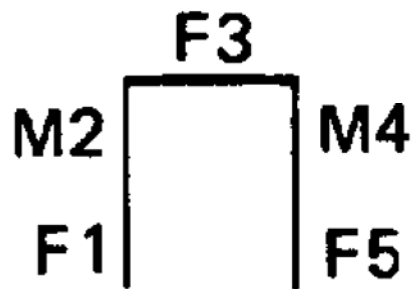
# FEMALE



# FEMALE









## Evaluation of Leadership

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- Finding not affected by conscious beliefs
- For female leaders, “warmth” negatively correlated with leadership



# Evaluation of Leadership

## *Prescriptive Gender Norms*

### ■ Men

- Strong
- Decisive
- Assertive
- Tough
- Authoritative
- Independent



### ■ Women

- Nurturing
- Communal
- Nice
- Supportive
- Helpful
- Sympathetic



# Unconscious bias in the search process: Evaluation of Leadership/Competence

- Evaluate fictional Assistant Vice Presidents
  - Male-assumed job—company makes engine products and other AVPs are men
  - Rated under two conditions: performance clear and performance ambiguous
  - Characteristics rated:
    - Competence, personality, likeability, interpersonal hostility



# Evaluation of Leadership

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- **Competence**
  - Performance clear—no gender difference
  - Performance ambiguous—women less competent
- **Likeability**
  - Performance clear—women less likeable
  - Performance ambiguous—no gender difference



*What to do?*



# Overcoming unconscious bias—best practices

- Learn about research on biases and assumptions—consciously strive to minimize influence of unconscious tendencies on your evaluations (Kruglanski & Freund 1983)
- Instruct committee members to avoid bias (Blair & Banaji 1996)
- Spend sufficient time evaluating each applicant and avoid distractions (Martell 1991)
- Reach out to applicants from under-represented groups individually (Wennerås & Wold 1997)



# Overcoming unconscious bias—best practices

- Increase the proportion of women and minorities in the applicant pool (Heilman 1980)
- Do not depend too heavily on any one element of a portfolio (Trix & Psenka 2003)
- Develop evaluation criteria *prior* to evaluating candidates and stick to the criteria. Periodically review evaluation decisions and ensure that criteria continue to guide the selection of candidates. (Uhlmann & Cohen 2005; Biernat & Fuegen 2001)



# Overcoming unconscious bias—best practices

- **Ensure that evaluation committees are as diverse as possible** (Lowery, Hardin & Sinclair 2001)
- **Switch the gender/race “thought experiment”** (Valian 1998)
- **Use counterstereotype imaging** (Blair, Ma & Lenton 2001; Dasgupta & Greenwald 2001)
- **Use an “inclusion” rather than “exclusion” strategy to evaluate candidates** (Hugenberg, Bodenhausen & McLain 2006)
- **“Blind” the evaluation process** (Goldin & Rouse 2000)



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