The Science of Unconscious Bias

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Outline of Presentation

- Understanding unconscious associations

- Demonstration of our biases

- How unconscious bias affects our behavior

- Breaking free of biases

Being of Two Minds

Reflective system for controlled processing
  - Conscious, explicit
  - Effortful, requires motivation
  - Takes more time

Reflexive system for automatic processing
  - Often unconscious, implicit
  - Requires little effort
  - Fast

- Different neural structures distinguish the two
  - Satpute & Lieberman (2006)

The Reflexive System Uses Implicit Associations

- Cognitive links between concepts that co-vary

- Bring one to mind, others are activated

- Activation can happen unconsciously
  ...can be at odds with conscious goals
  ...can influence judgment and behavior

Unconscious Gender Biases

- Unequal gender distribution of men and women in certain roles creates implicit associations
  - Eagly (1987); Glick & Fiske (1996)

- With domains...
  - Work = male; Family = female
  - Science = male; Arts = female

- That generalize to traits...
  - Male = independent, competent
  - Female = cooperative, warm

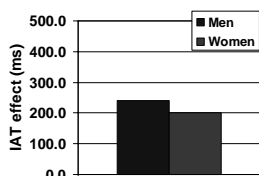## One Way to Measure Unconscious Bias

- The Implicit Association Test (IAT)
  Greenwald, McGhee, & Schwartz (1998)

  - Measures strength of association between concepts
  - Based on premise that associated concepts will be easier to categorize together

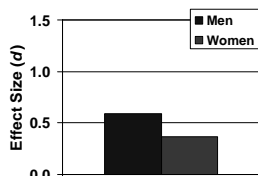## Men and Women both Show Implicit Gender Biases

Association of math = male & arts = female

Nosek et al. (2002)

Association of men = independent & women = communal

Rudman & Glick (2001)

Data on the IAT
(Nosek, Banaji, & Greenwald, 2005)

|	Total N	Effect Size (d)
Yale IAT Web site		
Bush-Gore attitude	7,639	.05
Black-White attitude	21,925	1.02
Gender-Science stereotype	11,911	.86
Old-Young attitude	19,574	1.35
Black-White attitude	17,050	.81
Old-Young attitude	7,186	1.07
Dark-Light attitude	5,254	.73
Gender-Science stereotype	12,269	.93
Native-White stereotype	4,495	.34
Gay-Straight attitude	27,220	.78

In comparison, effect size for gender differences in complex mathematical problem solving: $d = .29$
Hyde, Fennema, & Lamon, 1990

Implications for Behavior

- Implicit **racial biases** predict...
  - Amygdala activation (fear response)
    - Phelps et al. (2000)

  - Lower performance ratings
    - Amodio & Devine (2006)

  - Avoid the other group
    - Amodio & Devine (2006); Phills & Kawakami (2005)

  - More negative interactions
   - Dovidio et al., (2002); McConnell & Leibold (2001)

Dovidio et al., 2002
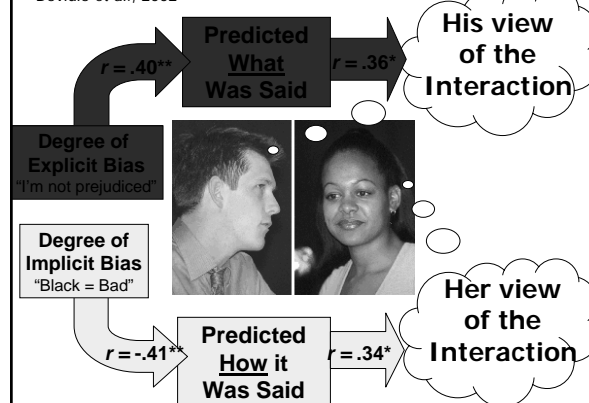
Implications for Behavior

- Implicit **gender biases** ...
  - Predict biased ratings of job candidates
    - Rudman & Glick (2001)

  - Might be manifested in letters of recommendation
    - Schmader et al. (2008), Trix & Psenka (2003)
    - Men are more often described with superlatives & as having ability
    - Women are more often described as working hard

  - Can contribute to women's weaker association with math
    - Even among math & science majors
      Nosek et al. (2002)

A Two Strategy Solution

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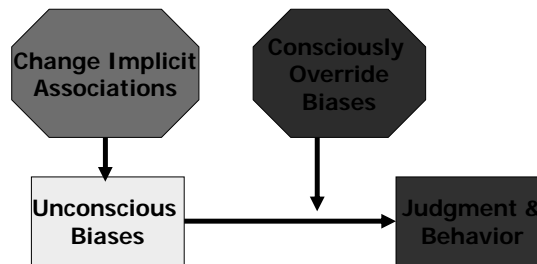
1) Overriding Unconscious Bias

- Be <u>motivated</u> to control bias

- Be <u>aware</u> of the potential for bias

- Take the <u>time</u> to consider individual characteristics and avoid stereotyped evaluations

Example
When writing evaluations, avoid:

1. **Using first names for women** or minority faculty and titles for men (*Joan* was an asset to our department." –vs.- "*Dr. Smith* was an asset to our department.")

2. **Gendered adjectives** ("Dr. Sarah Gray is a *caring, compassionate* physician" –vs. – Dr. Joel Gray has been very *successful with his patients*")

3. **Doubt raisers** or negative language ("although her publications are not numerous" or "while not the best student I have had, s/he")

4. **Potentially negative language** ("S/he requires only minimal supervision" or "S/he is totally intolerant of shoddy research")

5. **Faint praise** ("S/he worked hard on projects that s/he was assigned" or "S/he has never had temper tantrums")

6. **Hedges** ("S/he responds well to feedback")

7. **Unnecessarily invoking a stereotype** ("She is not overly emotional"; "He is very confident yet not arrogant"; or "S/he is extremely productive, especially as someone who attended inner city schools and a large state university"
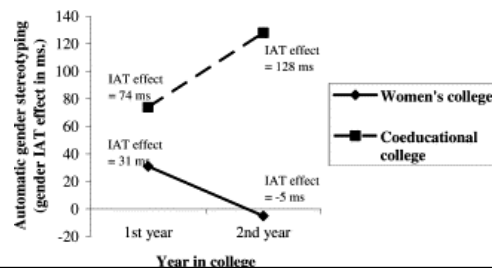
2) Changing Unconscious Bias
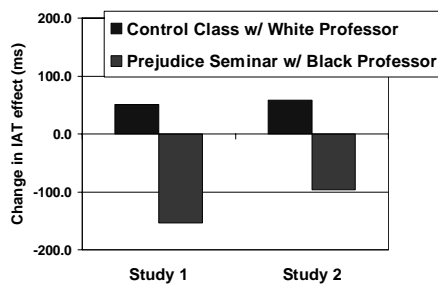
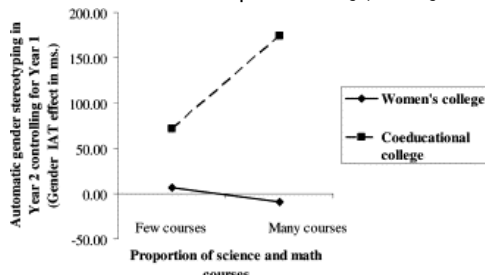- The effectiveness of education (Rudman et al., 2001)

2) Changing Unconscious Bias

- The effectiveness of education (Rudman et al., 2001)
- The effectiveness of exposure (Dasgupta & Asgari, 2004)

2) Changing Unconscious Bias

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Take-Away Points

- Implicit bias is distinct from conscious motivation

- We all have these biases due to cultural exposure

- They can affect behavior unless we override them

- They can be changed with education and exposure

Questions, comments, insights?

Take other Implicit Associations Tests Online:
https://implicit.harvard.edu/implicit/