Solo Status: How low institutional diversity affects members of underrepresented groups

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A simple plan

- Hire one African American faculty member in each department of the college
- Five years later,
  - 25 African American faculty hired
  - But 18 left the university
**Solo status**: being the only member of a social category present in a group.

Can be differentiated from:
- Minority status – one of few
- Token status – selected due to minority group membership

Solo status describes the situation of any individuals who find themselves to be the only representatives of their social category present.
Demographics of science faculty (NSF, 2006)

- Of 173,800 science tenure-track faculty
  - 4% Asian American
  - 2% African American
  - 1% Hispanic
  - 0.2% Native American/Alaskan Native

- Women represent 26% of science-related workforce

- Less than 10% of faculty at top math, engineering departments are women
Field and Lab Research on Solo Status

- Reveals several consistent themes (Kanter, 1979)
  - Heightened visibility
  - Perceived scrutiny
  - Contrast
    - Being seen as very different from others
  - Role encapsulation
    - Being assimilated to stereotypic roles
- Effects on performance and performance related outcomes
Solo Status Lab Research

* Advantages
  * Able to randomly assign individuals to solo and non-solo situations
  * Able to control behavior of others towards the solo individual so as to examine the experience of solo status per se

* Disadvantages
  * Not “real-world”
  * Issues of generalizability

* Just one part of a multi-method approach that will increase understanding overall

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Solo Setup

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Results - race solos
(Sekaquaptewa & Thompson, 2002 PSPB)

Interaction $F(1, 74) = 5.67, p < .02$

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Results - gender solos

(Sekaquaptewa & Thompson, 2002 PSPB)

Interaction Contrast $t(1, 68) = 2.67, p < .001$

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Women and racial minorities in non-traditional fields are likely to face solo status in conjunction with negative stereotypes.

Stereotype Threat: the situation in which individuals perceive that their actions could be seen as confirming a stereotype held about their group (Steele, Spencer, Aronson, others)
Stereotype Threat Research

- Members of stereotyped groups underperform when stereotypes are salient in the testing situation, compared to when stereotypes are minimized.

- Are the effects of solo status compounded by stereotype threat?

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Solo Status and Stereotype Threat

- 157 White men and women give an oral exam performance either as a gender solo or non-solo.
- Test material was described as “traditional math” (ST condition) or as being gender-neutral (No Threat condition).
- Oral exam performance scored for accuracy.
Results

(Sekaquaptewa & Thompson, 2003 J ESP)

SS x gender F(1, 148) = 4.06, p < .05
ST x gender F(1, 148) = 3.99, p < .01

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Other outcomes
(Sekaquaptewa, Waldman, & Thompson, 2007)

- Race centrality
  - “My racial/ethnic group is an important part of my self-image”

- Race-reflection
  - “Others might generalize my performance on the task to my race as a whole”

- Race-representativeness
  - “During this study, I felt like I had to represent my racial group”

- Performance apprehension
Sekaquaptewa, Waldman, & Thompson, 2007

- 156 participants (121 White, 35 African American)
- Placed in race solo or non-solo status
- Believed they would perform a group task with the others
- Completed measures of race centrality, race reflection, race representativeness, performance apprehension
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<tr>
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<th>Participant Race</th>
<th>Non-Solo</th>
<th>Solo</th>
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Summary

- Members of minority groups have more negative experiences as solos than majority group members.
- Being in solo status can impair performance for women and African Americans.
- Solo status can lead minority group members to feel like they represent their entire race.
Intervention Research: Some promising leads

- Creation of a “common ingroup identity”
- Emphasizing the presence of in-group members in the field as a whole
- Learning about solo status and stereotype threat research
  - “Knowing is half the battle” (Schmader et al., 2005)
  - “So it’s not just me!”

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Conclusions

- Because there are so few women and people of color in science, they are likely to experience solo status.
- Experimental lab research demonstrates the significant negative effects of solo status on individuals randomly assigned to groups.
- The negative effects of solo status on performance are unique to members of underrepresented groups.
- We must consider the consequences of low diversity in academic science settings.
Thank you

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- Funding provided by the National Science Foundation Grant 91833; the National Center for Institutional Diversity; and UM Advance.