



NCWIT Summit
on Women and IT
practices and ideas
to revolutionize computing
May 16-18, 2016 | Red Rock Canyon, Nevada



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NCWIT Research: A Social Science Primer

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The Big [science] Picture

NCWIT's Social Science Team Includes:

- 11 people on the NCWIT social science research team
- 25 people on the NCWIT Social Science Advisory Board
- The work of this team is distributed across the NCWIT Alliances:



The Big [science] Picture

Science Expertise Involved:

- Psychology
- Sociology
- Gender Studies
- Feminist Theory
- Critical Race Theory
- Economics
- Education Research
- Identity Theory

What Do You Know About...

- Microinequities
- Stereotype threat
- Implicit associations
- Institutional barriers
- Personality penalties



A Systemic Perspective

- Minority Groups Aren't Broken
- Majority Groups Aren't The Enemy
- Culprit = We all share Societal Biases
- We know more about this than ever before
- We Can Take Action Together



Unconscious Bias

“Challenge AND Opportunity”

Society is Biased About Gender and Technology



Society is Biased About Gender and Technology



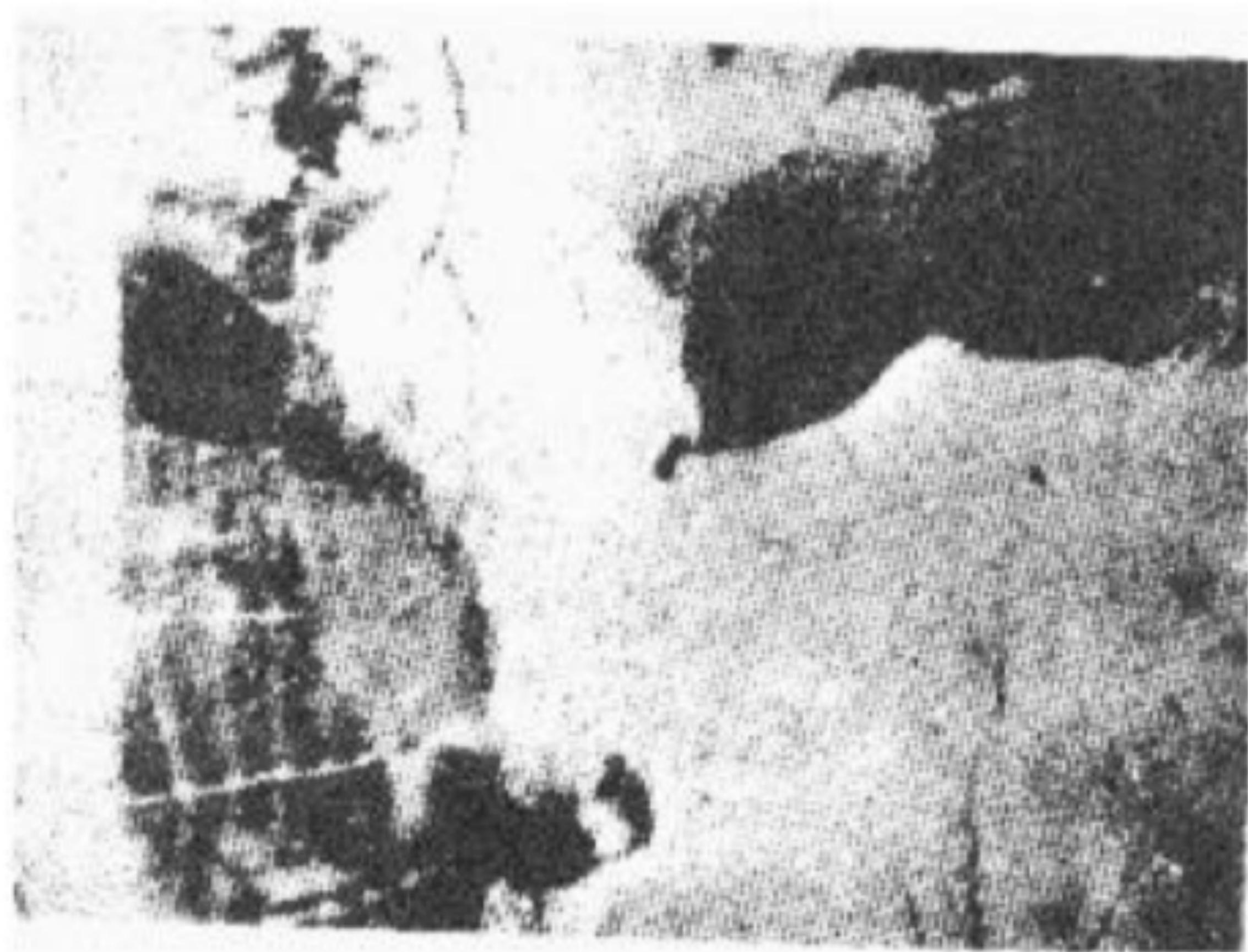
"I'm only creating the design ideas," Barbie says, laughing. "I'll need Steven's and Brian's help to turn it into a real game!"

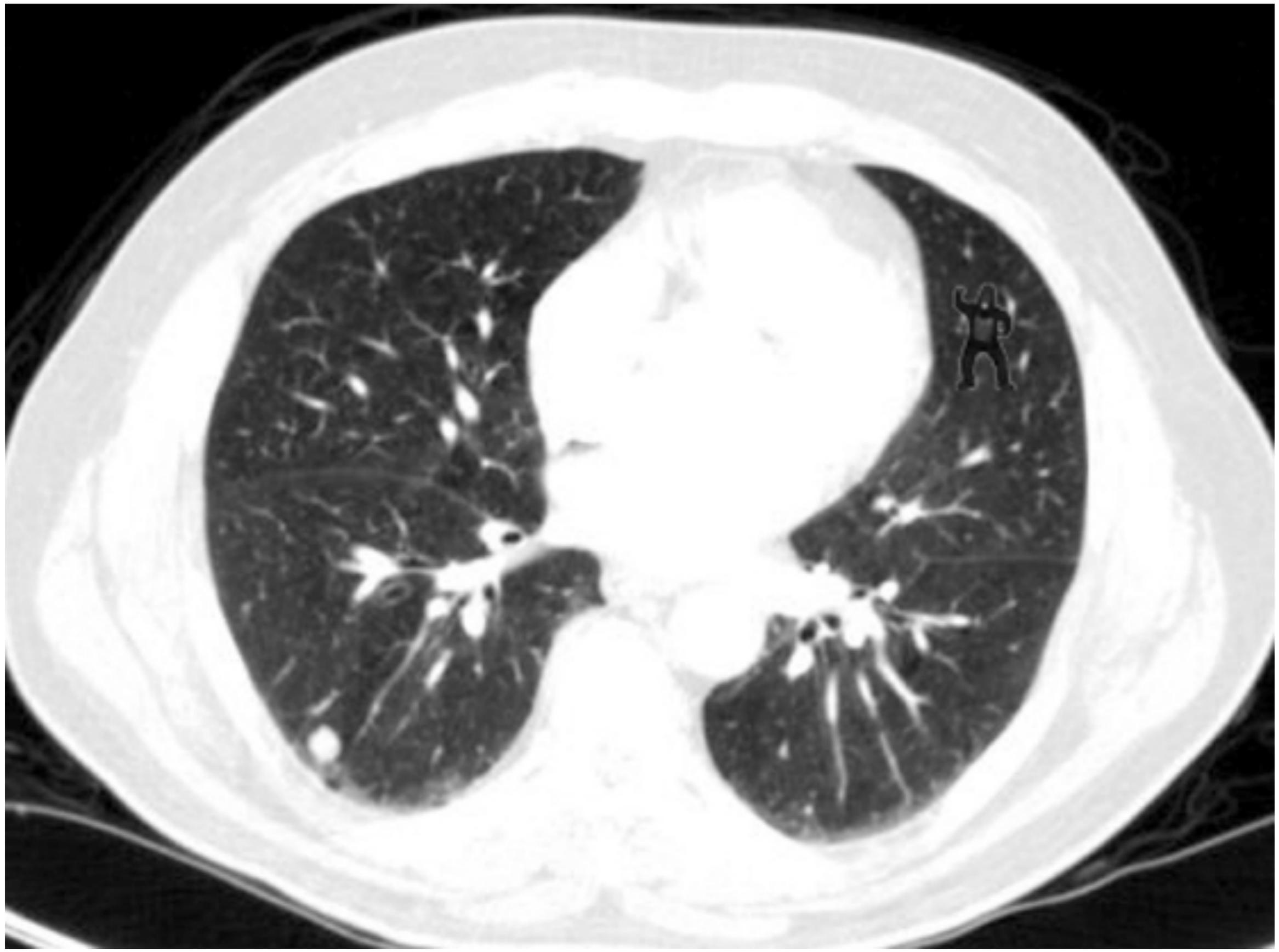
What Causes Societal Bias?

We all have shortcuts, “schemas” that help us make sense of the world. But our shortcuts sometimes make us misinterpret or miss things.

That’s unconscious bias.





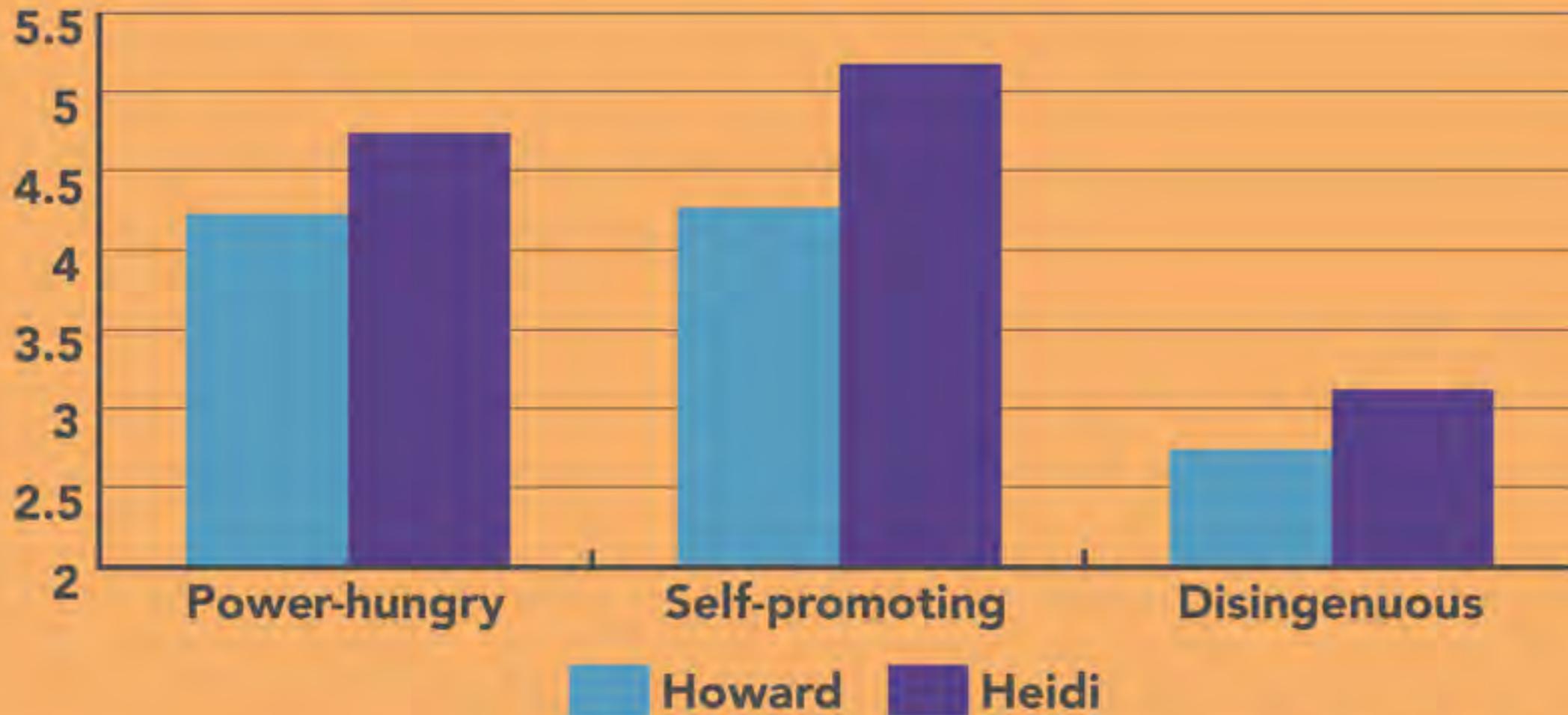


More on Societal Bias Howard vs. Heidi



Howard vs. Heidi

How power-hungry, self-promoting, and disingenuous was Roizen?



Howard vs. Heidi

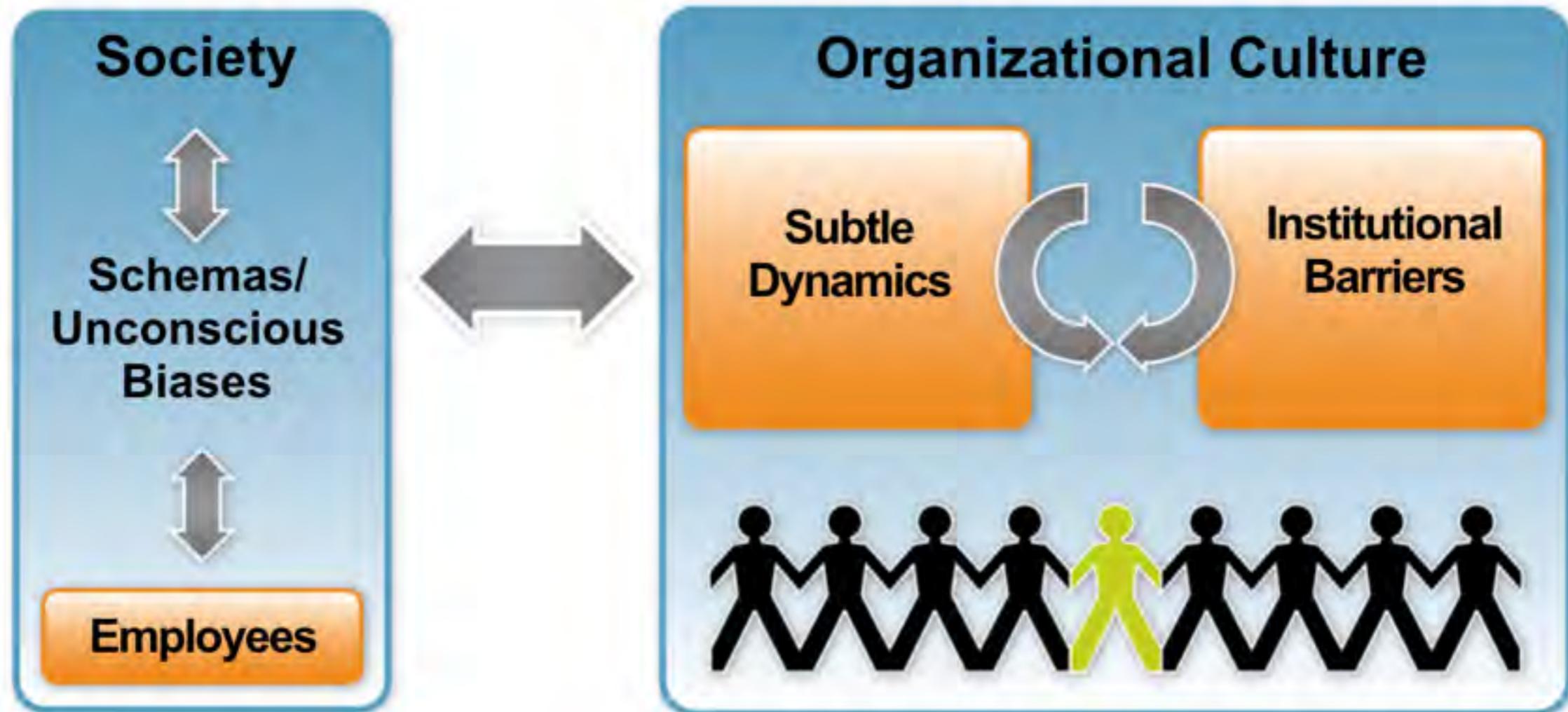
Would you like, hire, like to emulate Roizen?



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1-7 scale (from "not at all" to "extremely")

We All Bring Unconscious Bias to Work



Intersectionality: Intersecting Identities & Intersecting Biases



Microinequities

“Find a way to work with Jane so she speaks up more in meetings.”

“Oops, I forgot to cc her/him on the email about the architecture review.”

“You just need to be more ‘professional.’”

More frequent interruptions at meetings

Credit for ideas going to men who simply re-state what a woman said

“Is it really necessary to cc her/him on the email about the architecture review?”

“She just needs to be more ‘technical.’”

“Dude, let’s talk about it over a beer!”



Stereotype Threat



- Fear that our performance will confirm negative stereotypes
- Lowers performance and participation

Stereotype Threat



White male engineering students score lower when told in advance that Asians typically score higher on math tests

Personality Penalties



“Pushy, bossy, aggressive”

”Has a challenging personality”

“Sometimes you could tone it down a little”

Doubt Raisers: “Need to see more evidence?”

Growth Mindsets More Likely to Interrupt Bias

| Fixed Mindset | Growth Mindset |
|--|---|
| Intelligence and ability are fixed traits | Intelligence and ability can be developed |
| Mistakes & deficiencies are hidden | Mistakes are used constructively to enhance abilities |
| Biases are reinforced: 1st impressions last longer | Schemas are expanded; more open to differences |
| Willingness to mentor and sponsor are decreased | Willingness to mentor and sponsor are increased |
| Room to grow unevenly applied | Room to grow applied for all |

How Cumulative Biases Show Up in Technical Environments

Not speak up in meetings

Be reluctant to take
leadership positions

Be overly harsh about their
own work

Discount their performance



How Cumulative Biases Show Up As Institutional Barriers

Recruiting - Retaining - Advancing

Hiring (mirror-tocracy)
Selecting people “like me”

Biased Task Assignment
Women find themselves in “low status” jobs

Unfair Performance Appraisal
Men appraised for effort, skill; women for collaboration, luck

Biased Promotion
Criteria modeled implicitly on existing senior male leaders

Research to Practice

The NCWIT Systemic Change Models



Research to Practice

Emerging Ideas: New, untried, innovative practices too young to have much evidence for success -- though may be based on sound theory.

Promising: Relatively new practices, some evidence of success under specific conditions with smaller samples.

Vetted/Effective: More mature, well-tested practices, strong evidence for success under broader conditions with larger samples.

Lessons Learned: Lack of evidence and/or evidence against the practice after adequate testing; they may hold promise if altered; considered learning tools to discover what does work.

Bias Interrupters That Foster Employment Development



Interrupt “Fixed-Mindset” Talk

“natural talent”

”he’s a born-leader”

“either you’ve got it or you don’t”

“a leopard doesn’t change its spots”



Interrupt “Personality Penalties”

“Hmmm, what did you mean by that?”



Ensure Productive Team Meetings

Solicit opinions of quieter employees
(in the moment OR later)

Intervene when someone is
interrupted or not getting credit

Find an ally who can support and
help you notice these things

Ensure debate is constructive and
disagreements contribute to goal



Becoming a Bias Interrupter:

Scenario Activity

The Critical Listening Guide

Hear this?

Types of Problem Statements:

Fix the woman **(in yellow)** • Essentialism **(in blue)** • Framing as "women's issues" **(in purple)**

Click on a statement to find out what to ask or add to continue the conversation, as well as the common misperceptions behind the statement.

"Women need to learn to be more confident,"

"Women bring communication or people skills."

"Women want a female interview partner."

"Women are such great collaborators."

"Learn to take up space, and toot your own horn."

"Hey ladies, we need to

Fostering Growth Mindsets & Interrupting Bias

What would you do or say?

In the hall, a colleague mentions Sarah has potential, if only she could learn to tone it down a bit and not be so abrasive.

You notice that someone is repeatedly interrupted in a meeting.

You hear someone coach a colleague on how to get ahead, encouraging her to take it “low and slow,” meaning to lower her voice and speak more slowly.

You’re sponsoring an employee who is unsure whether or not they should take on a risky assignment.

You see someone getting credit for something another colleague said earlier in the meeting.

You hear a team lead scold a new employee for mistakes on a project, and that they need to stop making errors as they are not tolerated — especially in these high-visibility projects.

You recommend an employee you’re sponsoring for an opportunity, but get the response, “we’re not sure she’s the right fit; she’s not a natural leader.”

Work meetings typically include spirited discussion and argument, but Samantha consistently avoids engaging in that manner; instead, she prefers to respond via email later on.

Your Scenario?

LEGEND:

Fixed Mindset

Personality Penalties

Microinequities

Stereotype Threat

Activity Instructions

1. Pick a scenario to work on or create your own
2. Generate two ideas for dealing with or intervening in this scenario
3. Jot down questions you had while dealing with this scenario

NCWIT Research Projects

Recent & Current Research Projects:

- Male Influencer Study
- Intersectionality and Technology Study
- Predicting Undergraduate Retention in Computing
- Understanding Faculty Adoption of Teaching Practices that Retain Undergraduate Women in Computing
- Women Computing Entrepreneurs
- Pathways Study
- Internet2 Baseline Survey

Questions?

