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Language Matters: Considering Racial Microaggressions in Science

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What do you think of
when you hear the
term
microaggression?



Microaggression Definition

- Defined as brief, sometimes subtle, everyday exchanges that either consciously or unconsciously denigrate an individual based on their group membership (Sue 2010)
- Can be spoken, written, or environmental
- Can be targeted towards gender, race, sexual orientation, socioeconomic status, religion or other feature that may be part of someone's identity

Three Types of Microaggressions

- **Microassault**
 - Defined as “conscious, deliberate and either subtle or explicit... biased attitudes, beliefs, or behaviors that are communicated to marginalized groups through environmental cues, verbalizations, or behaviors” (Sue 2010)
- **Microinsults**
 - Defined as “interpersonal or environmental communications that convey stereotypes, rudeness, and insensitivity and that demean... a person’s identity” (Sue 2010)
- **Microinvalidations**
 - Defined as “communications or environmental cues that exclude, negate, or nullify the thoughts, feelings, or experiential realities of certain groups” (Sue 2010)

Microassault: Maria's Med School Request

- Pulin is co-teaching a biotechnology course with his colleague Anya. One of their best students Maria approaches Anya after a lesson she led to ask about medical school. Pulin overhears Anya respond to the student “I am not sure you are going to be able to cut it in medical school here, have you thought about going back to your country for med school instead.”
- When Anya uses this kind of language, she signals that she does not respect Maria's abilities and looks down on Maria's culture. She also makes assumptions about Maria's situation that may not reflect reality. These biased attitudes may severely affect Maria's performance in the course and future endeavors in the medical field.

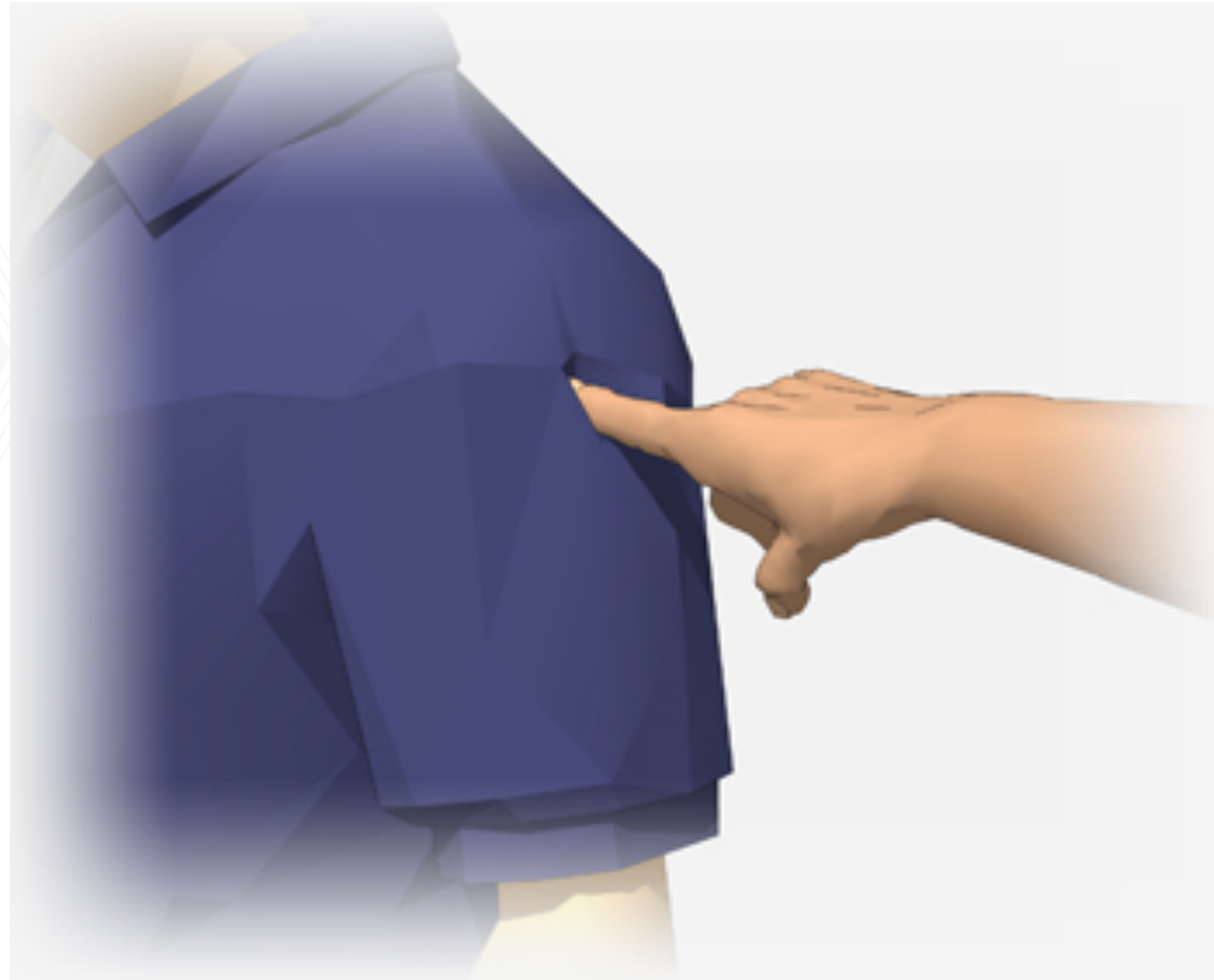
Microinsult: Nick's Lab Group

- Marcus is TAing a intro lab course and helping groups to form and get started on their first project of the semester. He overhears one group discussing roles and a student make the comment, “Well Nick, you must be good at math so why don’t you handle the stats stuff.” Nick is the only Asian-American student in the group.
- By espousing a stereotype about Asians and math, the speaker is being insensitive to Nick’s identity. Nick may now feel self conscious about being good or bad at math and may affect his comfort in class and in the group.

Microinvalidation: Lisa's Faculty Meeting

- Lisa is in a biology faculty meeting when the topic of Black students not feeling comfortable in biology classrooms is raised. The chair of the department says this is not be an issue because they have no issues with race in the department and suggests the students just need to take better advantage of the resources on campus. This response seems to shut down any discussion and several of Lisa's colleagues including the only Black faculty member look uncomfortable.
- By denying the realities of the Black students on campus, the biology chair is sending the message that the department does not take the concerns of this population of students seriously. It also sends a negative message to the Black faculty member, suggesting that the department may not be supportive if similar discussions are raised in relation to faculty issues.

Adverse Effects of Microaggressions



Poking as Microaggressions

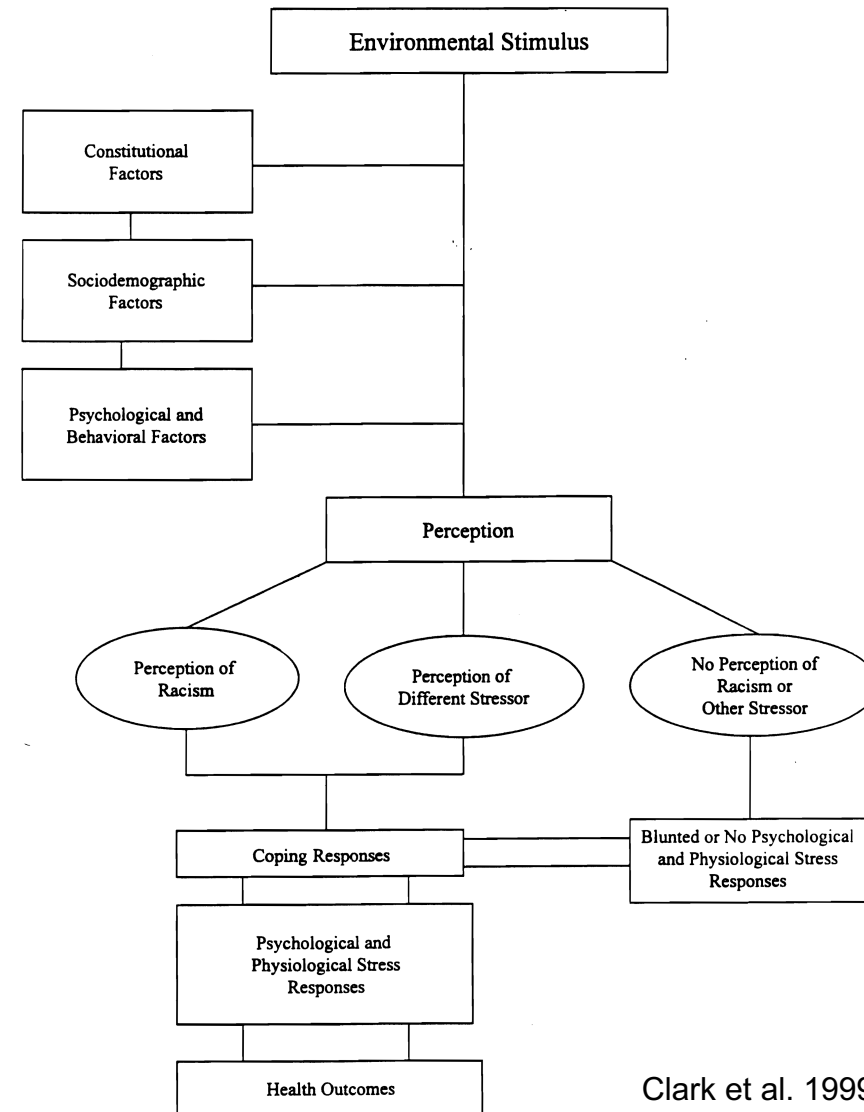
- Microassault - The person poking you may not care that it is affecting you or may have rationalized why they are doing it, even as they are consciously aware that they are poking you and that it has consequences
- Microinsult - The person poking you may not even be aware they are poking you and may not be aware that their poking can have negative effects
- Microinvalidation - The person may be poking you or know you are being poked, but may not think it matters or is a cause for concern

No One Wants to be Poked All Day



Psychological Effects of Microaggressions

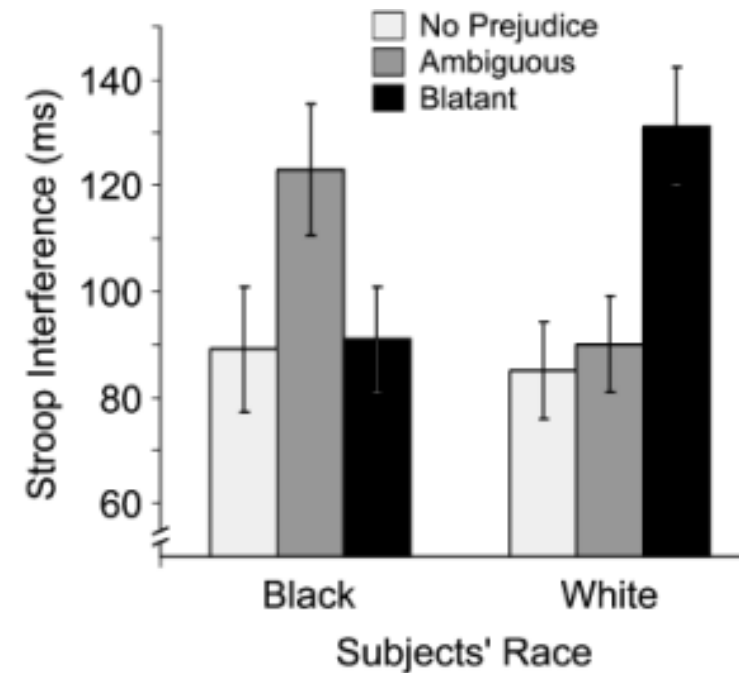
- Evidence that microaggressions can lead to a range of psychological impacts that can impede learning, engagement, and belongingness in a scientific academic setting (Wang et al 2011, Torres and Driscoll 2010)
- Negative health outcomes can occur as well (Clark et al 1999)



Clark et al. 1999

Psychological Effects of Microaggressions: Cognitive Energy

- Individuals spend cognitive time and effort analyzing whether a microaggression has occurred (Salvatore and Shelton 2007, Bair and Steele 2010)
- Have to decide whether they are going to address the microaggression (Clark et al 1999, Torres et al 2010, Mercer et al 2011)
 - Can also cause stress especially if the microaggression originates from an authority figure



Salvatore and
Shelton 2007

Psychological Effects of Microaggressions: Isolation and Depression

- Microaggressions can also leave an individual feeling isolated in the scientific academic environment. In high pressure, scientific academic environments, this can lead to significant and added challenges for those trying to succeed in this setting.
- This feeling of isolation can lead to stress, anxiety, and depression (Wang et al 2011, Nadal et al 2014)

Table 2. Study 1: Within-Person Associations Between Race-Relevance Appraisals and Emotion Intensity Among Asian Americans

Emotion	Model 1: Without controlling for other social identities (N = 172)		Model 2: Controlling for other social identities (N = 172)	
	HLM Level 1 slope	SD of slope	HLM Level 1 slope	SD of slope
	Externalizing			
Anger	0.42***	0.21***	0.35***	0.20***
Frustration	0.33***	0.20***	0.27***	0.17*
Scorn/contempt	0.38***	0.23***	0.33***	0.21***
Internalizing				
Anxiety	0.19***	0.15***	0.14***	0.14*
Sadness	0.15***	0.20***	0.11***	0.15*
Shame	0.19***	0.21***	0.17***	0.17*
Other				
Confusion	0.26***	0.21***	0.24***	0.20*
Disappointment	0.16***	0.22***	0.10***	0.15*

Unlike Model 2 (the right columns), Model 1 (the left columns) did not control for age, gender, height/weight, and social class-relevance appraisals. Significant standard deviation suggests reliable individual differences in the appraisal-emotion association. HLM = Hierarchical Linear Modeling.

* $p < .05$. *** $p < .001$.

If microaggressions are bad how do we deal with them?

- Students rate confronting the microaggression in some manner as most effective way to deal with them (Boysen 2012)
 - Direct confrontation, class discussion, private conversation, counterexamples
- Students want microaggressions taken seriously and validated
 - Feelings of invalidation can lead to problems and are associated with microaggressions
- Burden shouldn't fall on students to deal with them (Sue et al. 2009)
 - Adds cognitive stress to students if they are responsible

How Would You Deal With Scenarios?

Scenario 1: Microassault

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How Would You Deal With Scenarios?

Scenario 1: Microassault

1. Talk to Maria after the fact and offer your assistance in the pursuit of her medical school dreams. In addition acknowledge Anya's words and how they could affect Maria's sense of belonging.
2. Politely interrupt Anya and make it known that you think Maria is fully capable of pursuing a med school career. Also address that it is insensitive to Maria's culture to assume that she is not from here or that her culture is in some way less.
3. Approach Anya after class to discuss her statement and why it was wrong to say. Try to discuss with Anya ways in which she could handle the situation better in the future and encourage her to speak with Maria again.

How Would You Deal With Scenarios?

Scenario 2: Microinsult

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How Would You Deal With Scenarios?

Scenario 2: Microinsult

1. Approach Nick after class to check in about how the in class statement affected him. Let him know that you understand what the issue may be and promise to follow up with the individual who made the statement privately.
2. Ask Nick's classmates what they meant by the statement about Nick's abilities. Then point out that we shouldn't make assumptions about who might be good at what and let everyone identify their own skills and talents.
3. Discuss with the whole class that making groups is a partnership and we need to be respectful of everyone's feelings. We shouldn't make assumptions about what someone might be good at or want to do for the group.

How Would You Deal With Scenarios?

Scenario 3: Microinvalidation

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How Would You Deal With Scenarios?

Scenario 3: Microinvalidation

1. Meet with the chair privately to discuss why this problem actually is an issue. In addition explain why their comments could have an overwhelmingly negative impact on their department and colleagues.
2. Bring the discussion back up during the meeting and explaining why it actually is an issue. Explain how the chair's comments were invalidating to people dealing with the issue.
3. Send a follow up email to the department list-serve highlighting why this is a big issue and offering to meet with any other colleagues who want to discuss the issue and potential solutions further.

Mitigating Microaggressions: Non-Content Instructor Talk

- Language used in class by the instructor that is not directly related to course content
- 5 Categories: Explaining Pedagogical Choice, Unmasking Science, Sharing Personal Experience, Building the Instructor Student Relationship, Establishing Class Culture
- Seidel SB, AL Reggi, JN Shinske, LW Burrus, KD Tanner (2015). **Beyond the Biology: A Systematic Investigation of Noncontent Instructor Talk in an Introductory Biology Course.** CBE Life Sciences Education 14,4
- Harrison CD, TN Nguyen, SB Seidel, AM Escobedo, C Hartman, K Lam, KS Liang, M Martens, and others, KD Tanner (2019). **Investigating Instructor Talk in Novel Contexts: Widespread Use, Unexpected Categories, and an Emergent Sampling Strategy.** CBE Life Sciences Education.

Questions?

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