Q&A with Toni Schmader

Speaker in the Women and STEM series talks about how she became interested in studying educational outcomes

RECENTLY HAD the wonderful opportunity to sit down with Dr. Toni Schmader, Professor at the University of British Columbia, to talk about her groundbreaking research on stereotype threat among women in science, technology, engineering and math (STEM). We talked about how she began her academic career, advice she has for graduate students, and her insights into her latest research on examining the mechanisms behind stereotype threat.

What drew you to this field of study?

As far back as high school I was interested in differences in education outcomes, although minority groups were my original focus. It’s been more recent that I’ve been interested in how it pertains to women in science. It was interesting to me how situational factors can lead to impairments in how people think, form, and conceive of themselves. My training in graduate school was related to this and I’ve continued to pursue those ideas since then.

How did you come to study women in STEM fields?

The study of social psychology is usually interested in fairly basic processes. The study of stereotype threat, or the idea that you would be concerned about doing something that might inadvertently confirm a stereotype about your group, is something that anybody can experience. In some sense, I first got interested because women were a convenient sample to study, as the honest truth. But it’s really fascinating, too, because the more
you actually get into science yourself, as a women, you realize it takes on a personal significance as you see friends of yours start on an academic track and then they don’t continue. Going back, I can trace some of my personal experiences through stereotype threat, though at the time I didn’t necessarily frame them in the context of these theories. It’s interesting to see the way that stereotypes add pressure that shape the path you end up taking, without necessarily knowing that is what’s happening.

How did you get started in your career as an academic?

I originally wanted to do sociology in undergrad. However, there was a psychology professor who offered a class called “Coercion,” which was taught from a behaviorist perspective. She was interested in how people influence others from a stimulus-response angle, and I was just fascinated. I thought that sociology was the place where I would understand how context influences people, but after taking that class, I realized I was much more interested in the individual point of view, as opposed to the societal point of view. So I started taking psychology classes and never looked back. I knew that I wanted to go on and do a PhD, and so the question was figuring out what topic I was going to be most interested in. Once I settled on psychology, that became the direction I took.

Which writers, researchers, or professors particularly influenced or inspired you?

I always had an interest in educational disparities. As a high school student, I remember reading a book by Jonathan Kozol, who has written several books from a sociological perspective about the poverty of schools in inner cities that then lead to educational disparities for ethnic minority students. I was fascinated with that idea. Within the field, Brenda Major was my doctoral supervisor. I was very interested in the study of stigma and how people cope with being a member of a stigmatized group. Working with her was really inspiring, I learned a lot, and it gave me grounding in studying issues of stigma and stigmatization from a social psychological and experimental perspective. Given that I do research in stereotype threat, I’ve been inspired by the original work of Claude Steele and Josh Aronson. The first time I was on the UCLA campus was when I was a graduate student at UC Santa Barbara and Claude Steele was giving a colloquium here and a group of us caravanned down to hear him present. Also, when I started grad school at SUNY-Buffalo, Steve Spencer was on the faculty and I took his methods class, and so I owe him a debt for teaching me the philosophy of science in what we do.

What is on your research agenda right now?

In terms of the research we are doing on stereotype threat, we’re starting to examine the ways in which conversations themselves can cue the kinds of processes that we’ve been studying in terms of testing contexts, and seeing how this pertains women in STEM. What can we do about the dearth of female faculty members in STEM disciplines? We got really interested in the question of whether these processes play out amongst graduate students and amongst faculty members.

We did a study that got published last year in which we had male and female faculty members from a school of science wear an audio-recording device that came on periodically. It was a matched sample on department, rank, and productivity. They wore a device that periodically turned on and recorded ambient sound throughout the day, and they agreed to wear it for three consecutive work days. An amazing team of research assistants transcribed the conversations that we captured. Each conversational snippet was about 50 seconds. We coded those conversations to look at the conversations that take place between colleagues. We were interested in looking at when faculty members talk about research and also when they talk about social things (for example, how was your weekend?). We didn’t find overall differences between our male and female participants in the amount they talk about research or the amount they socialize with their colleagues. In general, people talk more about research than social things, which makes sense because they are at work.

One interesting mean difference was that we were able to code the gender of the person they were talking to, and when people were talking to women they were less likely to talk about research
than when they were talking to men. We were also able to correlate having research or social conversations with a self-report measure of job disengagement. For men, we had an expected, intuitive and non-surprising pattern: if you’re at work, the more you’re talking to your male colleagues about research, the more engaged you are with what you do. The more time you’re spending socializing, the less engaged you say you are with what you’re doing. For women, the pattern was exactly the opposite. If their conversations with male colleagues are more about research, the less engaged they say they are with their jobs. If their conversations with male colleagues are about social things, the more engaged they say they are with their jobs.

It’s preliminary because it is correlational, but it’s real world data. If it makes sense to interpret this data in light of stereotype threat theory, then you might argue that being part of an organization where you’re underrepresented — and women are vastly underrepresented in STEM, as we know — those social connections (being able to talk about your family, your weekend, your hobbies, for example) provides a sense of community, belonging, and fit to the organization, which can help boost engagement. At the same time, those research conversations are places where stereotype threat processes can come into play — talking about your recent grant ideas, talking about the rejection you just got on a manuscript. Those are the places where even faculty members might feel tested in their conversations with their colleagues. We’re following up experimentally, trying to understand these processes better with grad student samples in STEM, where we’re bringing in science grad students, pairing them up in cross-gender pairs to talk about research or talk about social things and measure the effect on levels of engagement.

How do you see the field of social psychology developing?

I think we see more interest in integrating ideas across different levels of analysis. We have had an upswing of interest in neural mechanisms that underlie thoughts and behaviors. At the same time, I think there’s also more interest in making sure that the ideas that we study have real world applications. I think there’s been a push to measure real behavior or real people and get outside of college student sampling. I think we see an expanding of the field, into microlevel mechanisms and into how all our processes tie to the real world. When I entered the field, it felt that social psychology had a bit more of an insular feel, it seemed that the focus was to study basic processes, not necessarily for the wider public to understand or for policymakers to apply. There’s been a movement in psychology more generally about “giving psychology away.” I think we see more of that in social psychology, of people being more cognizant of their audience not being just other academic social psychologists but also people in other disciplines and the general public.

What advice would you give current graduate students?

One piece of advice would be to have fun studying the ideas. One change that I see is that there seems to be an arms race for publishing more, faster, and sooner. Now, all of a sudden, to get a faculty job it takes many more publications than before. The problem is that it shifts so much more of what we do to a focus on outcome — What is the publication going to be? Where is it going to go? What kind of attention is it going to attract? — rather than on studying the questions that you find interesting and letting your own internal motivation monitor what’s an interesting question guide what you do and motivate you to take it to the outcome of getting it published and advertised to others. Having the motivation come from external pressures makes it much less fun. I know that’s easier advice to give than to take. When I think back to the project that I’ve been most excited to dive into, they’ve always been questions that I’ve found intrinsically interesting. Graduate school is a time when you can explore more readily and equip yourself with the tools that you’ll need later in your career. For example, it’s rare to get a chance to take a statistics class once you’re a faculty member. All of the methods and statistics are essential tools to have under your belt and guide the type of research you end up doing later. Form collaborations with your grad school friends because they can end up sustaining you. I know a lot of people who still publish with people who were friends as grad students.
Who are the people you look to now? Who are your current mentors or collaborators?

Once you are into a faculty position, the faculty members around you play a large role, even if you’re not directly collaborating, and they start shaping the way that you think and it starts becoming a mutual mentorship. Jeff Greenberg, a senior member of the social psychology program at Arizona, was an extraordinary mentor to me as a junior faculty member. We did end up collaborating on a couple of projects and we’re still collaborating on a writing project, not because we had similar theoretical interests but more because he is such a supportive colleague. Currently, at UBC all of my colleagues have been really wonderful in helping to shape and mentor my transition.

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