Cognitive psychology studies universal processes such as memory, decision making, or emotions, for example. However, the theoretical, epistemological, and methodological assumptions that support the field’s longtime focus on studying “cognitive universals” might have resulted in a science of human cognition based on the performance and behavior of people who are predominantly White, English-speaking, and socially dominant. In other words, scientific racism has likely influenced the study of cognition. How can researchers reshape cognitive psychology to become more aware of the roles of culture and context?

Ayanna Thomas is a professor at Tufts University and lead author of an article published in Current Directions in Psychological Science that explores how psychological scientists can reshape the field of cognitive psychology and move toward well-developed theories of cognition in context. Ayanna Thomas joins APS’s Ludmila Nunes to discuss scientific racism in cognitive psychology.

Unedited transcript:

[00:00:12.210] – Ludmila Nunes
Cognitive psychology studies universal processes such as memory, decision making, or emotions, for example. However, the theoretical, epistemological, and methodological assumptions that support the field’s longtime focus on studying precisely these cognitive universals might have resulted in a science of human cognition that is based solely on the performance and behavior of people who are predominantly white and English speaking. So, in other words, scientific racism has likely influenced the study of cognition. Now the question is, how can researchers reshape cognitive psychology to become more aware of the roles of culture and context? This is under the cortex. I am Ludmila Nunes with the association for Psychological Science, and for the first time, I’m actually in the same room with my guest. We are recording this episode at the 2023 APS Annual Convention in Washington, DC, to speak about the unavoidable impact of scientific racism in the founding of a field, specifically cognitive psychology. I have with me Ayanna Thomas Professor at Tufts University. Ayanna is the lead author of an article published in Current Directions in Psychological Science which explored how psychological scientists can reshape the field of cognitive psychology and move towards well developed theories of cognition in context.

[00:01:47.180] – Ludmila Nunes

Welcome to Under the Cortex. Thank you so much for joining me today during this convention.

[00:01:53.250] – Ayanna Thomas

This is a really great idea. I’m glad we’re doing this in person. It’s exciting.

[00:01:58.110] – Ludmila Nunes

So I read your article in Current Directions, and would you like to tell us what is the main takeaway?

[00:02:05.770] – Ayanna Thomas

Sure. The paper was focused on cognitive universals and focused on specifically the information processing model as the way that we cognitive psychologists do our work. I am not overly critical of this model, but I want people to consider that there are alternatives, and these alternatives can and should be embraced to the same extent as the models that we have been trained in.

[00:02:42.130] – Ludmila Nunes

So it’s not that there is a fundamental problem with the model and now we should throw away everything we learned using this model. It’s more that we should be aware of the constraints of the model we are using.

[00:02:42.130] – Ayanna Thomas

Absolutely. And one of the primary constraints is this internal focus, this brain in a box, as if it is not influenced by the body, by the environment, and it’s not a dynamic interaction.

[00:03:12.670] – Ludmila Nunes
We never truly departed 100% from the computer metaphor that we just receive inputs, our brain processes them, and then we spit out outputs.

[00:03:24.290] – Ayanna Thomas

Right. And that’s not how it works. It’s an easy model to follow. It’s really easy to generate empirical demonstrations of that model. But it is doing us humans a disservice if we think that our brain is functioning in this independent state as information processor.

[00:03:50.850] – Ludmila Nunes

Context matters. And when researchers in cognitive psychology start accounting more for different contexts, our science will certainly be improved.

[00:04:00.610] – Ayanna Thomas

Absolutely. This is not to say that universal principles of cognition don’t govern a lot of cognitive processing. However, I think that cognitive psychologists have taken it too far. We invariably are studying cognition in context. It’s just the context that we are looking at is very limited.

[00:04:26.850] – Ludmila Nunes

So it’s almost like we know everyone has memory and that’s universal. It’s impossible to study out of the context. It’s just that we have been using just the same context, a narrow context, and then we take our findings and we believe they apply to other contexts without studying the other contexts.

[00:04:50.910] – Ayanna Thomas

Absolutely. So if we talk about how we remember a particular event and a particular scene, we know that there are cross cultural differences in how different groups will remember. Does this mean that memory is not reconstructive? That’s not the case. Rather, it means that the way that people are engaging in reconstruction differs widely across different cultures. But the question in and of itself might also be biased. One point of the paper is questioning the search for universals. Another point of the paper is also thinking about the scientists who are posing these questions. We pose questions based on our own lived experience. To think that we don’t is incorrect. Even though we are supposed to come into our science as objective and impartial as we can, we do not leave ourselves at the door of the lab that comes in. It shapes the way that we question. It shapes the kinds of constructs that we think are important for investigation. And so I think another critical point about this paper and other work that I’m seeing in this area is that how questions are shaped are really driven by the cultural context in which they are emerging and it’s shifting that cultural context is also important in sort of pushing the field forward.

[00:06:31.580] – Ludmila Nunes

So it is important to understand the problem we are studying in context, but also understand our own context as researchers and how that’s going to shape the questions we ask, the methods we use, the population we decide to test all of those things. And so one of the actionable items to reshape the field
might be precisely open it to researchers with different contexts.

[00:07:00.470] – Ayanna Thomas

Absolutely. I think that APS is trying to make real strong connections to researchers in underrepresented areas of the world and that’s a great start. That being said, we have a long way to go. I know I have a long way to go. Right. I look at the work that I publish in Memory and Cognition, which is a journal that I serve as an editor for. And even though I have this perspective that we are discussing today, I find it very challenging to move forward on a manuscript that really falls out of my traditional training. So I think that we need to start having different voices on editorial boards, in conversations, at conferences. We have to spotlight different kinds of research. And it’s not just researchers. We need to go out to the community and figure out what’s important to them. After all, we do a science that’s primarily about human behavior. I know there’s comparative work out there, but most of our work is about human behavior. Yet we don’t ask the humans that we are studying what is of interest to them? How would they go about studying it? What kinds of methods would they use?

[00:08:33.190] – Ayanna Thomas

We assume that our expertise gives us this ability to identify the questions that are relevant and important. And I think that that is incorrect.

[00:08:47.060] – Ludmila Nunes

It’s a little bit of motivated reasoning when the questions just come from the researcher and they don’t have a basis on the real world, on what’s out there. Does this tell us that if we actually want to take context into account and change the field, maybe we should be looking outside of the field itself and try to establish these collaborations with people who might have more expertise or more experience with working with diverse communities and studying different types of constructs?

[00:09:22.380] – Ayanna Thomas

Absolutely. I think that there are folks in other fields that have been doing this work. They have methods, they ask questions in a very different way. Some are not interested in identifying universal principles at all, but rather just considering this particular moment and context and these individuals. This is no judgment on a particular methodology. My argument is that we need to embrace multiple methods in order to come to a fuller understanding of cognition.

[00:10:00.770] – Ludmila Nunes

And I’m very familiar with your research, so I know how precise your methods are. I know how you use what we usually call very good, very sound scientific methods. But one of the criticisms when we talk about opening up our science to other fields and to multiple methods is we have some people who will always say, oh, but those methods are not rigorous enough. Now, this is not necessarily true. They’re different and they might be used to answer different questions. I think you’re talking about these two.

[00:10:36.650] – Ayanna Thomas
I completely agree with you. This is a bias that we have. I think it’s a bias that I have.

[00:10:42.940] – Ludmila Nunes

I do too. That’s why I made the point in mentioning it. Because for me, it’s very difficult to not judge an article I’m reading immediately. Like, oh, they did not do a controlled experiment, this might be bad.

[00:10:54.710] – Ayanna Thomas

I think that maybe what we can do is start to model different kinds of articles if we want to, let’s say, start publishing articles that are using more mixed methods, approach qualitative approaches. Let’s model that so that authors have some sort of template that they can follow. I think it is arrogant for us to think that we know what rigor is. I think that in and of itself is a problem that we have to address and be aware of. That said, what makes good science? What allows the field to move forward? What does it mean to move forward? These are all questions I’m struggling with. But I do recognize that while there have been many important studies in the last almost 100 years of memory research, cognitive psychology. I don’t think the field has made all that much progress. I think we’re still sort of spinning our wheels in the same sort of questions. And I think that there’s another issue that constrains our movement and that’s the incentive structure of academia. We need to get grants for in the United States, we are generally thinking about tenure and promotion. The way that these kinds of awards and promotions are given are based on number of publications in high impact journals.

[00:12:43.750] – Ayanna Thomas

This reward and incentivized system really does need to evolve as the science evolves, so that we are now embracing more mixed methods approaches, we’re embracing more preprints, we’re embracing team based science approach, as opposed to this single individual has contributed this particular theoretical model. So those have to change. Those have been developed by the same structure that really informed the way that cognitive science operates today.

[00:13:26.370] – Ludmila Nunes

And how can we change this structure? Who can contribute to change this structure? Is it at the individual level? What can we do at the scientific societies level or at the more institutional level?

[00:13:41.990] – Ayanna Thomas

I think all of those levels. Right. I think that there’s a lot to be said about grassroots movements, about movements that are really developing programs and strategies that universities and institutions can implement. But I also think that there’s a lot to be said for big societies like APS taking a lead on how to restructure these kinds of incentives and also taking a lead on perhaps thinking about a publication model that allows for mixed methods that embraces different kinds of questions. But I think that what societies, editors and institutions really need to think about is what would be valuable in this context and develop those answers through dialogue with all of the relevant stakeholders and that’s the faculty, other scientists, the students, the people that we study. So it’s going to take some time and it takes patience in collecting the data that we need to move forward.
I totally agree with you, and I think it’s important to make those changes at those levels rather than, for example, engage in tokenism, which is something that I think we’ve seen many sessions about inclusivity and expanding the field. But I feel that very few have addressed the issue with tokenism that will actually derail us from the ultimate goal of improving our science, but might fulfill at the surface level this immediate goal or at least creating the illusion that we are actually addressing the issue.

Yes, I agree. I’m really glad that you’re raising this issue. I don’t think people talk about it enough. I think that those of us from underrepresented communities that are tapped a lot do feel that kind of pressure and we all have our different strategies for dealing with it. I just opt out a lot. I say no to lots of things. How do you change that. One thing that we talk about is mentorship and support and community building. And I think that that can go a long way to alleviating the problem. I think that really carefully considering a mentorship program that is broad, that helps people from underrepresented groups build a network with one another, helps to move things forward. But outside of carefully mounted community building programs, I’m not sure what else could be done.

Unfortunately, I also don’t have a solution. And what made me actually think about this issue was an article I read by Ishmael Reed, so not a psychology person, but he’s mentioning the problem with tokenism and the fact that highlighting certain individuals from underrepresented groups might actually hurt the other members of the group themselves. And I always feel that this is something we don’t talk about enough.

Would you mind explaining how that highlighting has a negative impact on other group members?

So the way he explained this was basically that it might open the questions and make people think about, oh, maybe we should be citing more authors from this group, or maybe we should be testing samples from this underrepresented group. And that is a good thing. But if it’s not done with these community building and making people more aware of the general questions, I think the biggest danger is that we will consider our job done.

Yes. And I do see that happening, that people think that their job’s done. I think that universities organizations do feel better when they can quantify. And I think just as cognitive psychology might need to embrace mixed methods, so should we all when we’re thinking about evaluating the progress towards these goals. I think that the first step is going to be changing the incentive structure for scientists. And this can happen system wide. This can happen from NIH and NSF. They play a big role here. They’re funding new programs of research. But the kind of science that they want to see within those programs
has not changed. I think you can see this at universities. I think large R one universities can take a lead here. They just need to do it. As soon as methods and templates and procedures are established and normalized, people will start adapting and adopting them. So I think we’ve digressed quite a bit, but the paper was meant to spark these kinds of conversations.

[00:19:26.870] – Ludmila Nunes

This is Ludmila Nunes with APS, and I’ve been speaking with Ayanna Thomas from Tufts University. We recorded these episodes at the APS annual convention in Washington, DC. I would like to thank you so much for speaking with me today. Ayanna, this was a pleasure.

[00:19:45.190] – Ayanna Thomas

It was nice to meet you in person.

[00:19:47.530] – Ludmila Nunes

Yes, I think we’ve known each other for a few years now, but we never actually met in person. Thank you so much.

[00:19:55.840] – Ayanna Thomas

It’s a pleasure.

[00:19:57.050] – Ludmila Nunes

If anyone is interested in reading this article or learning more, please visit our website psychologicalscience.org. You can also follow us on Instagram and Twitter at @psychscience.