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What Can Cognitive Science Do for People?

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Abstract

The critical question for cognitive scientists is what does cognitive science do, if anything, for people? Cognitive science is primarily concerned with human cognition but has fallen short in continuously and critically assessing the *who* in human cognition. This complacency in a world where white supremacist and patriarchal structures leave cognitive science in the unfortunate position of potentially *supporting* those structures. We take it that many cognitive scientists operate on the assumption that the study of human cognition is both interesting and important. We want to invoke that importance to note that cognitive scientists must continue to work to show how the field is useful to all of humanity and reflects a humanity that is not white by default. We wonder how much the field has done, and can do, to show that it is useful not only in the sense that we might make connections with researchers in

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other fields, win grants and write papers, even of the highest quality, but useful in some material way to the billions of non-cognitive scientists across the globe.

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1. Introduction

It is unclear how successful the field has been in making itself useful to humanity. Cognitive scientists have made some contributions in applied areas such as education (e.g., Miller-Cotto, Smith, Wang, & Ribner, 2021). Those contributions can be limited by unrepresentative homogenous participant samples (e.g., Prather, 2021; Thomas, de Royston, Powell, in review). Cognitive science has largely been concerned with its own legitimacy within academia and connections to other academic fields such as biology, psychology, linguistics, philosophy, neuroscience, and computer science. This may in part be due to the interdisciplinary nature of cognitive science and its relatively recent origins. Many of the disciplines that make up the family that constitutes cognitive science have long, well-cataloged histories of supporting racism, race science, colonialism, and eugenics (Birhane, & Guest, 2021; Frawley, 2007; Gilpin, & Taffe, 2021; Kubota, 2020; Nye, 1993; Raposa., 2021; Remedios, 2022; Winston, 2020). Additionally, the statistical methods many researchers rely on also have a significant eugenics history (e.g., Louçã, 2009). It is worth taking explicit stock of how cognitive science as a field has grappled with that history, or not, and what the field may aim to do in the future. Additionally, it is worth considering how defaults in cognitive science may be implicitly built on assumptions of whiteness; though sometimes less *extreme* than race science and eugenics, such assumptions can be just as impactful.

2. Theory and data must represent humanity accurately

What can cognitive science do? Many things can be done to orient cognitive science as a discipline to be a positive force for humanity. First, it would help to focus on the variations in culture and context that humans have across the globe. Theories of cognition, no matter how interesting or sophisticated, cannot be sharpened using only a tiny sliver of people to represent humanity (Bryan, Tipton, & Yeager, 2021; McCoy, 2021). The inclusion of people with a wide range of developmental, cultural, and societal experiences is crucial, both in terms of research participants and practitioners.

Cognitive science is for and about everyone. The reliance on homogenous population samples to make generalizations about humans is unlikely to serve the field well in the future (Prather, 2021; Thomas et al., in review). No group of people's cognition should be relegated to an interesting exception because their culture or nation-state is not (currently) dominating the scientific research enterprise. Global reach for the discipline requires stretching. Does cognitive science have relevance in places without the large, well-funded research institutions of Europe and North America (Dutra, 2021)? Are there not people in those places? Why

should cognitive scientists who study these groups settle for some sort of niche relevance? The challenge for cognitive scientists is to construct a characterization of human cognition that can account for these variations across humanity and what that may mean for the idea of some universal human cognition. The answer to that question is beyond the scope of this letter, but it must be directly in the focus of cognitive scientists' future endeavors.

3. Application of cognitive science in benefiting people

How can scholarship in cognitive science benefit people? We identify some potential critical next steps that cognitive scientists may begin with—an intentional expansion of the communication and collaboration directly with communities, applied researchers, and practitioners. There are fortunately other fields that have devoted more focused energy to these sorts of collaborations. Cognitive scientists do not necessarily need to reinvent the wheel. We may read up on lessons learned in other fields tackling their own problems and collaborate outside of our field to garner the needed expertise. In fact, because of the interdisciplinary nature of cognitive science, some of us may be familiar with how other fields approach these goals. Cognitive scientists should enter into this sort of collaboration with epistemic humility.

1. *Work directly with communities using participatory research approaches both locally and across geographies.* It is important for researchers to avoid repeating the extractive and exploitative history between white institutions and Indigenous and Black people. See examples of how to avoid extractive relationships between researchers and communities from anthropology (Asase, Mzumara-Gawa, Owino, Peterson, & Saupe, 2021), public health (Ballard, Farrell, & Long, 2020), engineering (Leydens & Lucena, 2018), and design (Costanza-Chock, 2020).

2. *Collaborate with applied researchers and relevant practitioners.* The evolution of educational neuroscience (both the pitfalls and successes) serves as an example. The idea here is not that cognitive scientists would hand over findings to more applied researchers but to work to situate research outside of the ivory tower, where most people are (Thomas, Ansari, & Knowland, 2019).

3. *Make more explicit connections with other social sciences and critical studies.* Cognitive scientists should seek to make further connections with other human concerned scholarship and critical studies (Lindsay-Dennis, 2015; Settles, Warner, Buchanan, & Jones, 2020). Questions that cognitive scientists are interested in around human behavior have also been addressed by Black psychology (Serpell, Boykin, Madhere, & Nasim, 2006), field social psychology (Power & Velez, 2021), and feminist psychology (Else-Quest & Hyde, 2016; McCormick-Huhn, Warner, Settles, & Shields, 2019). This may involve cognitive scientists considering research questions that might seem the domain of other social sciences. It also involves placing work in a historical context and admitting science is not race neutral (Dupree & Kraus, 2022; Trawalter, Bart-Plange, & Hoffman, 2020). For example, are racial disparities in cognitive decline with aging (Peterson, Butler, Ehiri, Fain, & Carvajal, 2021) relevant to cognitive science? Cognitive processes always occur in context (López, Luque, &

Piña-Watson, 2021) including those contexts is equally important to hypothesized internal mechanisms (Prather, 2021).

4. *Remove barriers for researchers.* Journal editors and funding reviewers need to let go of the idea of the white control group and recognize the value of scholarship with non-white participants on its own terms (Zuberi, & Bonilla-Silva, 2008). Getting papers published without a white comparison group seems to be a never-ending problem. This must stop considering over 90% of the world is non-white, so any study that aims to make generalizable conclusions using a white sample may be severely limited. Measures that were created with homogenously white participants group cannot be assumed to generalize well to everyone else.

4. Concluding remarks

The preceding suggestions are by no means prescriptive. There are many possible avenues that researchers may pursue. We strongly support movement of the field in that general direction. The goals articulated here may seem irrelevant to some readers. There are many other important concerns involving theory, application, and what might be seen as scientific progress. Our concerns do not imply mutual exclusivity. We do think that it is crucial, for a scientific field, carried out by humans, within human societies and context, to take time to seriously and explicitly consider in our research programs the always urgent question: what are we doing for others?

5. Conflict of interest

The authors have no conflicts of interest to declare.

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