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## Should the Study of *Homo sapiens* be Part of Cognitive Science?

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### Abstract

Beller, Bender, and Medin argue that a reconciliation between anthropology and cognitive science seems unlikely. We disagree. In our view, Beller et al.'s view of the scope of what anthropology can offer cognitive science is too narrow. In focusing on anthropology's role in elucidating cultural particulars, they downplay the fact that anthropology can reveal both variation and *universals* in human cognition, and is in a unique position to do so relative to the other subfields of cognitive science. Indeed, without cross-cultural research, the universality of any aspect of human cognition cannot truly be established. Therefore, if the goal of cognitive science is to understand the cognitive capacities of our species as a whole, then it cannot do without anthropology. We briefly review a growing body of anthropological work aimed at answering questions about human cognition and offer suggestions for future work.

*Keywords:* Anthropology; Philosophy; Human universals; Cross-cultural research; Evolutionary psychology; Gene–culture coevolution

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### 1. Introduction

Should anthropology be part of cognitive science? Beller, Bender, and Medin (hereafter BBM), after ruminating on this question, conclude that “a reconciliation seems unlikely to follow on the heels of good intentions alone.” This might be a fair statement about the current state of the field. However, the question they ask in their title is not an “is” question, but a “should” question: Regardless of the current state of the field, how *should* it be? In order to answer that question, in our view, we must ask whether cognitive science would

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like to be a discipline that can make statements about our species, *Homo sapiens*. BBM clearly think that the answer to that question is *yes*. Cognitive science, they write, “is interested in general effects” and “strives for insights that explain something about the human mind in general.” We would argue that in order to make general statements about humans, cognitive science cannot do *without* anthropology, because without cross-cultural comparisons, it is impossible to know what aspects of human cognition are truly universal. Without anthropology—which we take to include cross-cultural methods quite broadly, as we will discuss in more detail below—cognitive science may do just fine answering questions about American cognition, European cognition, neural network cognition, Bayesian cognition, robot cognition, and the like. But without studying the full breadth of human nature as it manifests outside of the laboratory and across the globe, it is impossible to make general statements about our species. If this is what we want to do, then not only should anthropology be part of cognitive science, it is required.

According to BBM, however, anthropologists “tend to concentrate on one specific cultural group” and their findings “often do not allow generalizations to be drawn or even comparisons to be made.” In its extreme form, this “Bongo-Bongo-ism” insists that cross-cultural comparisons “should not be made at all.” Although this may be true of some anthropologists, we believe that in recent years some of the most interesting, important, and widely discussed work in anthropology has been done by researchers with a keen interest in general theories that must be tested in divergent cultural settings with due attention to representative samples, replicability, and experimental controls.

We agree with many of BBM’s points about the “troubled” history of the relationship between anthropology and the rest of cognitive science, and that anthropology has never quite lived up to its promise as a full-fledged member of cognitive science. We also agree that part of this can be blamed on anthropology, which has to a large extent turned its attentions elsewhere, and that part of it can be blamed on the rest of the cognitive sciences for refusing to engage with what anthropologists have to say and their methods of study. However, unlike BBM, we perceive the influence of anthropology on our understanding of cognition to be on the rise.

The reasons for this difference of opinion are twofold. First, BBM seem to consider only a small part of anthropology to be relevant to cognitive science. In particular, they focus on the subfield of cultural anthropology known as cognitive anthropology, which they characterize as “fossilized.” This vastly underplays the scope of anthropological work that might play a role in addressing questions about human cognition, including not only work in traditional branches of anthropology such as biological anthropology, linguistic anthropology, archaeology, and cultural and social anthropology, but also new forms of culturally situated experimental research, which we discuss below. Second, BBM seem to consider the major role that anthropology can play in cognitive science to be the illumination of cultural differences. We agree that the study of cultural variation is a critical part of anthropology’s mission, but it is not the only part. Just as important to cognitive science, if not more so, is the fact that anthropology is a science that can allow us to make statements about our species as a whole. Although this might not be a self-proclaimed goal of many anthropologists, most anthropologists would agree that facts about humans in

general cannot be definitively established by studies in a single culture, such as Western college students, or a small subset of cultures. For this reason, cross-cultural research is a prerequisite for cognitive science.

We believe that there is a growing renaissance of interest in doing anthropologically informed cognitive science across cultures—not by a unified subfield of anthropology that has a particular name, but by scattered groups of researchers from diverse backgrounds who are working on questions of central importance in cognitive science. For this forward momentum to continue, it needs to be nurtured. In the remainder of our commentary, we will briefly summarize our view of what anthropology can contribute to cognitive science, point to some signs that it is already doing so, and make some suggestions for the future.

## **2. The scope of anthropology**

Since its inception, anthropology has been a hybrid science, incorporating research on human biology, language, behavior, beliefs, and material culture. In the United States and Europe, the subfields of anthropology have taken different historical trajectories and names, but writ large, anthropology is without doubt a multidisciplinary field that includes many areas of potential relevance to cognitive science not mentioned by BBM. To give just a few examples, there is the study of evolutionary genetics and what it might tell us about the evolution of human brains. There is paleoanthropology, which continues to make important discoveries about ancestral human lifeways, diets, behavior, and development. The archaeology of human-made artifacts stands to tell us much about the evolution of human cognition, social life, and cultural transmission. Linguistic anthropology provides crucial information on the diversity and commonalities of human languages, on how language is actually used in the world, and on the relationships between language, culture, and thought. Cultural anthropology, including the subfields of cognitive and psychological anthropology, has of course already made large contributions to the understanding of human psychological diversity and similarity. And finally, there are relatively newer but growing areas of research in anthropology, including behavioral ecology, evolutionary psychology, and the study of culture–gene coevolution, which are interested in broad theoretical questions about the nature of human psychology, human behavior, and human culture, and which consider anthropological data essential for answering these questions. Importantly, unlike some anthropologists who are hostile to the idea of generalizable inferences, representative samples, replicability, and experimental control, the work of these researchers is quite self-consciously designed to generate the kinds of generalizable knowledge key to interfacing with the rest of cognitive science. This includes not just the use of traditional ethnographic techniques, but the use of new and hybrid techniques such as experiments, vignette studies, and structured interviews specifically designed to address questions about cognition.

Of course, there is a long history of cross-cultural studies using standardized methods in anthropology, including studies of cognition (Boas, 1911; Ember & Ember, 2001; Whiting & Whiting, 1975). Although such studies have never disappeared as part of anthropology's methodological toolkit, they fell into disfavor in some parts of anthropology, in particular in

parts of cultural anthropology that turned away from notions of generalizable knowledge. However, many scientifically oriented anthropologists are beginning to return to the idea of cross-cultural comparisons using methods drawn from a variety of sources, including experimental psychology, experimental philosophy, and economics—and actively collaborating with researchers in these fields—while also taking to heart the lessons and methodology of ethnographic research. Examples include Henrich et al.'s (2005) cross-cultural studies of decision making using standardized economic games, and Levinson and colleagues' studies of the role of language in shaping spatial cognition across cultures (Levinson, 2003). A goal of such studies is to combine carefully controlled experimental methods with anthropological expertise about the study population in question, to avoid the pitfalls of what is sometimes called "parachuting in," or gathering data at a field site during a short visit without any ethnographic expertise about the study population or personal knowledge of the study participants. Indeed, that is the rationale behind a large-scale cross-cultural research project that is currently under way (and in which we are participants), the AHRC Culture and the Mind Project.<sup>1</sup>

From the earliest planning, the Culture and the Mind Project was broadly interdisciplinary, involving psychologists, linguists, economists, and philosophers in addition to anthropologists. The first step in the strategy the group adopted was to locate important questions that are of interest and importance in several of the participating disciplines—thus inevitably squarely within the purview of cognitive science—and that might be productively advanced by cross-cultural research. The next step was to collectively design research procedures that could be carried out at multiple sites. The input of the anthropologists was absolutely crucial at this stage, as the participants from other disciplines learned, often to their amazement, that some of the research designs they had imagined were not feasible: "You can't translate that question into the language of my group." "You can't *ask* that question in the culture where I work; it is not a topic that they would ever discuss." "That example makes no sense in the environment of my field site." "I couldn't possibly schlep that equipment to my field site." These and many other concerns were expressed repeatedly by the ethnographers; they were always taken seriously; and they made a profound impact on the shape of the research protocols that were ultimately, collectively adopted. The fine tuning sometimes continued even after the anthropologists were in the field. A message, sometimes via e-mail, sometimes via satellite phone, alerted the rest of the group that something was not working properly. The participants were interpreting the question or the task in a way that neither the ethnographer nor anyone else in the group had intended. A fast e-mail consultation would follow and a suggestion for a patch emerged that would not undermine the usefulness of the data.

When the data were in and presented to the group for collective analysis, once again the anthropologists had a crucial role to play. What might explain this odd feature of the data? Is there some fact about the local culture or ecology that might make this group different from the others? What was happening when the data were collected? Answers to these questions and many more were on the table as the group attempted to analyze and interpret the data. Importantly, local knowledge of our individual cultures and study sites was not always or even mostly used in the form of the so-called "ethnographic veto," which often

manifests in claims such as “this study can’t be done at my site,” “these questions make no sense in the context of the culture where I work,” or, in its most extreme form, “phenomenon X doesn’t occur here.” Instead, consultation between the ethnographic experts was crucial to attempting to locate underlying universals, or at least common themes or patterns of theoretical interest, across cultures. These might otherwise have been masked by obvious cultural differences combined with an unwillingness to try in good faith to understand another researcher’s theoretical or empirical constructs, unfortunately all too common in anthropology.

We are under no illusion that this is the only model for anthropologically informed cross-cultural research in cognitive science, or that it is the best. And, truth be told, it was not always easy. It is a model that requires team players who respect and trust each other and the disciplines they represent. Those who stuck with the project had to learn to speak a common language in thinking about our research questions, even while retaining a noticeable psychological or philosophical or anthropological accent. The result, we believe, was a remarkably cohesive interdisciplinary research team.

Although this is not the place to describe the Culture and the Mind Project’s research in detail or to recount our findings, it will be useful to say something about a few of the questions we have explored. Arguably, the single most influential achievement of anthropology, as it emerged as an academic discipline, was the detailed description of dramatically different moral norms and moral systems in different cultures. For much of the 20th century, philosophers debated how to deal with these findings, and more recently the findings have posed a challenge to the study of moral cognition by psychologists and cognitive neuroscientists. But in contrast with the vast body of anthropological work on moral norms, there has been surprisingly little anthropological exploration of *epistemic* norms. Indeed, as we read the literature, there is no clear evidence that epistemic norms—norms governing the ways in which people form and revise their beliefs—even *exist* in many cultures. This looked like an ideal topic to be tackled by an interdisciplinary group of philosophers and psychologists working closely with ethnographically engaged anthropologists. After educating each other about the relevant literatures in our home disciplines, the team designed and revised (and fine-tuned and revised again) a long, carefully controlled vignette study. Using a meticulously constructed set of questions, participants were asked to tell us how they would react to a member of their culture who formed beliefs in various ways (some sanctioned by Western philosophical epistemology, others not), when those beliefs had a variety of consequences, sometimes good, sometimes bad, and sometimes neutral. These reactions allow us to assess participants’ beliefs about which grounds for forming a belief are acceptable and which are not (e.g., is hearing a report from an eyewitness, or the testimony of an expert, suitable grounds for believing something?). The results, we expect, will be of interest not only to anthropologists and philosophers but also to cognitive, social, and evolutionary psychologists among whom debates about human rationality have been center stage for 20 years.

Another Culture and the Mind Project study addressing an important question in contemporary cognitive science focuses on moral psychology. The existence of a distinction between *moral* norms or judgments and *conventional* norms or judgments, drawn along the lines first suggested by Elliott Turiel (1979, 1983), has played a major role in the recent

renaissance of research on moral cognition and moral judgment. Some have proposed that the ability to draw this distinction can be used to determine whether a person has a normal, intact moral judgment system (Blair, 1995; Nichols, 2004). Others have questioned whether the Turiel test reveals anything at all about moral cognition (Kelly, Stich, Haley, Eng, & Fessler, 2007). However, there have been very few studies aimed at exploring whether the moral/conventional distinction, as conceived by Turiel and his followers, is recognized by people in small-scale societies like those in which many of the Culture and the Mind Project anthropologists work. Adapting the Turiel test to these settings, we quickly discovered, is a challenging task that would be hopeless without the guidance of ethnographers with an intimate knowledge of the local cultures and the environments. But it was, we felt, a challenge worth tackling, as whichever way the data went, it promised to make an important contribution to a topic of interest to philosophers, cultural and cognitive psychologists, cognitive neuroscientists and psychiatrists, as well as to anthropologists—or at least the growing subset of them who believe that empirically testable generalizations and theories have a crucial role to play in anthropology.

### 3. Taking anthropology seriously

Not all anthropologists would agree that it is possible to do genuinely comparative research using a common set of field methods across multiple sites. Some anthropologists would argue that the uniqueness of individual cultures (and even individual individuals) renders such comparisons impossible. If that is true, however, it is not just cross-cultural research in anthropology that is doomed. So is cognitive science, or at least its ambition to produce general knowledge about humankind and human cognition.

Obviously, we believe that this extreme degree of pessimism is unwarranted. However, we wholeheartedly agree with anthropological skepticism about “parachuting in,” and about the naïve belief that any experimental instrument can be transported anywhere simply by translating it. As we have already stressed, cultures differ widely in things like norms of communication, what kinds of questions are permissible or even intelligible to ask, and assumptions that people make about shared knowledge and pragmatics. The idea of an “interview” or an “experiment” is not the same, nor even present, everywhere. How people construe and relate to visiting anthropologists, especially nosy ones asking the sometimes bizarre questions that cognitive scientists are interested in, is highly dependent on culture, context, and interpersonal history with the researcher.

For these reasons, current and future generations of anthropologists who seek to do cognitive science in the field must take to heart the hard-earned lessons of traditional anthropology and avoid shortcuts. Anthropological research cannot be done without taking the time to situate oneself in a culture beforehand. Moreover, many laboratory experiments might not work in field settings, or might produce results that do not mean what the experimenters think. Humans are inferential creatures that try to figure out *why* you are asking them a question or to perform an experimental task, and without the proper anthropological expertise, it can be difficult if not impossible to design proper field experiments, let alone interpret the

results. This is why cognitive science cannot get the cross-cultural goods on the cheap simply by sending laboratory-trained psychologists to foreign lands. Local expertise is necessary. Projects such as the Culture and the Mind Project take this to heart by assembling teams of experienced ethnographers, something that will be a necessary part of any future anthropological cognitive science.

#### **4. The future of anthropology in cognitive science**

Our view of the potential role that anthropology can play in cognitive science is, at least in principle, as broad as the scope of anthropology itself. There is virtually no question in anthropology that does not bear, at least in some way, on questions about human cognition (there are exceptions, of course, such as studies of human physiology in biological anthropology). By pointing to the potential for anthropology to answer questions about human universals, we are not suggesting that this is the only role that anthropology can play in cognitive science. How the mind responds to the particulars of culture and environment are also, of course, questions of critical importance to cognitive science. Moreover, we do not believe that what counts as “anthropology” reduces to something as simple as “research done by a person with an Anthropology Ph.D.” Indeed, psychologists such as Doug Medin have done research that counts as anthropology in every important sense of the term. Instead, what matters is taking seriously the idea that a full understanding of human nature requires more than laboratory studies of college students (Henrich, Heine, & Norenzayan, 2010).

As we have stressed, however, the kind of anthropology that can contribute meaningfully to cognitive science is not easy. Getting cognitive data from undergraduates is often simply a matter of offering credit in a subject pool or posting flyers offering a few dollars for participation. Getting cognitive data from other cultures is, in contrast, often incredibly difficult, with the difficulty in some cases proportional to the value those data have for addressing important questions in cognitive science, such as whether a given cognitive phenomenon manifests the same way outside the reach of Western industrialized culture. This important work can only be done if there are people willing to do it, and there are a lot of serious costs associated with it, especially for junior academics—such as the massive time investment of developing a field site and the inability to run as many studies per unit time as colleagues in cognitive psychology, not to mention the serious prospect of unemployment. If cognitive science needs these kinds of data to truly understand human cognition—as we are arguing it does—it will need to put its money where its mouth is. In the current culture of cognitive science, some kinds of data, such as fMRI data, are treated with great reverence, drawing massive amounts of grant money and earning placement in top journals. Anthropological studies, we are arguing, are just as valuable and just as difficult to produce but are accorded far less value in the current cognitive science landscape. If this is to change, then journals must take an active role to promote such work, grant agencies must be open to and encourage interdisciplinary collaborations to support it—especially among young scholars—and academic departments must be open to hiring people working at the intersection of anthropology and other disciplines in cognitive science.

We hope that future generations of anthropologists interested in human cognition, and cognitive scientists interested in human nature, expand the scope of the interaction between anthropology and the other parts of cognitive science beyond its currently narrow construal as a sliver-like intersection of much larger sets. This will require a return, in anthropology, to an interest in creating generalizable scientific knowledge, and a recognition that the study of human nature and how it manifests itself across the bewildering diversity of human cultures is as important as the study of cultural particulars for their own sake. It will also require the rest of cognitive science to converge on the same goal, namely, understanding human nature and understanding the nature of our species' cognition in the broad range of environments where it occurs. As BBM point out, many cognitive scientists view the study of human nature as their goal, but they seem to have forgotten that in order to do this they must get out of the laboratory and into the world, particularly the part of the world well beyond the confines of university campuses. Over most of human evolution, cognition *was* "cognition in the wild," and only by studying it that way can we get a complete view of what human cognition is.

## Note

1. <http://www.philosophy.dept.shef.ac.uk/culture&mind/>

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