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Innateness, Universals, Diversity

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Introduction

Is the mind equipped with universal biases? If so, how can we account for the well-recognized diversity of human cognition? And if universal biases do exist, what is their source—do they reflect innate principles of core knowledge, or can they emerge from domain-general pressures? Finally, how can we, cognitive scientists, “get” human nature better—minimizing the pitfalls of our intuitive cognitive biases and our narrow WEIRD perspective?

This symposium seeks to address the question of human nature from a broad interdisciplinary perspective. We begin by examining the notion of “human nature” and the concept of innateness (Samuels) and exploring some of the challenges facing its discovery by the confinements of our own human cognition (Berent). The next talk (Culbertson) exposes the tensions between cognitive universals and diversity in the domain of language, contrasts domain-specific with domain-general explanations of these facts, and demonstrates the merits of a cross-linguistic perspective. The last talk (Majid) considers how language is used to express perceptual categories across cultures, explores how culture and nurture can shed light on human nature, and highlights some of the challenges in sifting through the tight nature-nurture interactions.

Throughout these four talks, we hope to highlight both theoretical gains and limits in our current understanding of innateness and domain-specificity, the value of exploring human diversity, and the challenges we, humans face when we seek to explore our own human nature.

Human Nature and Human Diversity

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There is a puzzling tension in contemporary scientific attitudes towards human nature. On the one hand, the traditional “essentialist” conception of human nature is untenable in the light of quite general, and exceedingly well-known, evolutionary considerations. On the other hand, talk of human nature abounds in certain regions of the cognitive and behavioral sciences.

This presentation focuses on the question: “Given developments within the biological and behavioral sciences, what sense if any can be made of the notion of human nature?” In doing so, I first identify four theoretical roles that human nature has traditionally played within the sciences: a taxonomic function, a descriptive function, a causal explanatory function, and the function of delimiting a domain of empirical enquiry. Second, I sketch the traditional essentialist view of human nature – roughly, that all and only humans possess a distinctive suit of intrinsic properties – and explain why this view is untenable. Finally, I sketch an alternative, “replacement” account of human nature – what might be called causal essentialism about human nature – that plausibly fills the theoretical roles traditionally ascribed to human nature, without falling prey to the objections that render traditional essentialism unviable.

Can we get human nature right?

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Few questions in science are as controversial as human nature. Why is innateness such a hard question? Could our troubles arise from within—from the psychological confinements of the human observer?

I first review recent experimental work, suggesting that US adults are systematically biased in reasoning about human nature. Specifically, these participants are positively biased to presume that emotions are innate, but they outright reject innate ideas.

Another set of studies shows how these biases could arise from the collision of two intuitive psychological principles: Dualism and Essentialism. Per Essentialism, we assume that the innate essence of living things must reside in their bodies; Dualism, however, mandates that ideas are ethereal and disembodied. It follows, then, that, intuitively, (disembodied) ideas cannot be innate. The experimental results bear this out.

Finally, I examine the origins of these intuitive biases. Informed by previous cross-cultural research and new experimental results from autism, I explore the possibility that Dualism and Essentialism are grounded in core knowledge. These results open-up the possibility that our troubles with human nature arise from human nature itself.

A diverse approach to language universals

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Languages exhibit striking diversity, but we also find intriguing commonalities among them which have fueled longstanding debates about the nature of our capacity for language. In this talk I discuss three phenomena which illustrate the range of implications that can be drawn from cross-linguistic commonalities. The first is known as the suffixing bias: a tendency for languages to have suffixal rather than prefixal morphology. I argue that the empirical evidence for the suffixing bias is itself biased: it is based almost entirely on English and related languages. I report a series of experiments comparing English speakers to speakers of Kĩtharaka, a prefixing language, showing that

when we expand the range of populations we study, we gain a much better understanding of what is, and what is not universal. The second phenomena is word order harmony--the tendency for languages to align heads and dependents across different phrase types. A preference for harmony is robust across speakers of different languages and found even using non-linguistic stimuli. I argue that harmony shows us how domain-general biases interacting with language-specific representations can shape language. Finally, I discuss how more complex ordering phenomena give us a window into how humans use hierarchically structured information when learning and using language. These case studies illustrate the complexity of interpreting so-called language universals, and the pitfalls of taking a WEIRD-centric approach. However, they also show how experimental methods for investigating universals can shed light on the human language faculty.

Reconciling nature and culture in the domain of perception

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Decades of research have informed our understanding of the rich conceptual precursors infants bring to learning. “Core knowledge” theorists highlight systems for representing objects, agents, and actions, for example. In addition, pre-linguistic infants show evidence of color categories, expect certain associations between musical pitches and space, and display clear preferences for some odors over others. Given this, we might expect to see these precursors revealed in the cross-cultural record with certain categories or associations more privileged in the language and thought of adults worldwide. However, this appears not to be the case. The exact number of color categories varies from place to place and the infant and adult data are hard to reconcile. Sound-space associations likewise, although present in infants, rapidly change in the face of differing cultural input. The case of odor is particularly interesting to consider. Here, the historical ethnographic literature suggested radical differences in odor preferences across cultures—with some communities cultivating tastes others found repulsive (e.g., *hákarl*, fermented shark, also known as “rotten shark”). New experimental data, however, reveals that odor preferences may be more constrained across diverse cultures than previously thought, and thus easier to reconcile with the infant data. An intriguing twist to this, however, is the fact that infants’ odor preferences are shaped by maternal diet, such that newborn infants differentially prefer odors that are part of the mother’s diet while they were still fetuses, highlighting the fact that culture and nature are not always so easy to disentangle.