

Thinking about the Cultural Evolution of Thinking



Programme

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Details

- Venue: Online Event (Zoom)
- Date: January 22, 2021
- Organisation: Karim Baraghith and Christian J. Feldbacher-Escamilla
- Funding and Support: German Research Foundation (DFG), Inductive Metaphysics (IM) – a research group the goal of which is to establish how empirical sources and inductive forms of inference play a role in metaphysical research
- Website: <http://dclps.phil.hhu.de/tacet/>

Speakers

- Azita Chellappoo (Bochum)
- Cecilia Heyes (Oxford)
- Larissa Mendoza Straffon (Bergen)
- Samir Okasha (Bristol)
- Mason Youngblood (New York)

Aims & Scope

Over the past decades, theories of cultural evolution gained more and more attention in the special sciences and in philosophy of science. Of particular interest is the mutual interaction and connection between culture and cognition. Culture has a huge impact on how (and what) we think and core aspects of thinking (such as memory, causal understanding, a theory of mind, rationality and other ‘cognitive gadgets’) are responsible for the products of cultural evolution.

Both share a Darwinian explanatory framework at their core, involving variation, selection, and reproduction/transmission. However, biological and cultural evolution differ in many important aspects and precise mechanisms – and many of these differences originate in the fact that we face ‘thinkers’ and more or less rational agents in cultural evolution. For example, cultural selection is subject to a whole range of ‘biases’ that have no analogue in biological evolution and are mostly grounded in cognitive capacities of the cultural agents.

While it is the aim of the special sciences to empirically explore this vast field of possible links between culture and thinking, social learning and cognition, it is the aim of philosophy of science to conceptually structure and represent this growing body of research. This workshop aimed at bringing together scholars of both fields to inspire dialogue and future collaborations.

Schedule

Friday, January 22, 2021:

- 10:00–11:00 Cecilia Heyes: *Cognitive Gadgets and Other Cultural Evolutionary Psychologies*
- 11:00–12:00 Karim Baraghith & Christian J. Feldbacher-Escamilla: *The Many Faces of Generalizing the Theory of Cultural Evolution*
- 12:00–13:00 Larissa Mendoza Straffon: *Human Cognition: species or culture specific?*
- 13:00–14:30 Lunch Break
- 14:30–15:30 Mason Youngblood: *Inferring Cognitive Phenomena from Cultural Evolutionary Patterns*
- 15:30–16:30 Azita Chellappoo: *Re-evaluating the Role of Prestige Bias in Cultural Evolutionary Theory*
- 16:30–17:30 Samir Okasha: *Can Adaptiveness and Rationality Part Ways?*

Abstracts

Karim Baraghith & Christian J. Feldbacher-Escamilla **The Many Faces of Generalizing the Theory of Cultural Evolution**

Ever since proposals for generalizing the theory of natural evolution have been put forward, the aims and ambitions of both proponents and critics have differed widely. Some consider such proposals as merely metaphors, some as analogies, some aim at a scientific generalization and unification, and some have even proposed to work out full reductions. In this talk it is argued that these different forms of generalizing the theory of evolution can be systematically re-framed as different approaches for transferring justification from the natural to the cultural realm, and that their differences are basically a matter of degree. That such a classification can yield valuable insights is demonstrated by help of the specific example of “cultural evolutionary psychology”, respectively the cognitive gadgets theory.



Azita Chellappoo **Re-evaluating the Role of Prestige Bias in Cultural Evolutionary Theory**

Systematic and widespread social learning biases play a key role in cultural evolutionary theory, allowing for cumulative evolution of skills and knowledge. One such bias that has received significant attention in the literature is prestige bias. Broadly speaking, prestige bias accounts understand it as a bias towards copying ‘prestigious’ individuals (which are typically described as high-status, due to a high level of skill or success in a socially valued domain, and so are treated by others with respect and deference). I argue for skepticism regarding the plausibility and scope of a prestige bias account. In particular, prestige bias accounts in cultural evolution are committed to a particular understanding of the cognition underpinning the bias. This results in predictions regarding its flexibility and context-sensitivity, which are undermined by current empirical evidence. This casts doubt upon the value of prestige bias in explaining and understanding human social learning.

Cecilia Heyes

Cognitive Gadgets and Other Cultural Evolutionary Psychologies

The cognitive gadget theory suggests that distinctively human cognitive processes – including imitation, metacognition, and theory of mind – are constructed during ontogeny through social interaction and shaped at the population-level by cultural selection. Humans genetically inherit psychological adaptations that prime cultural learning, but these adaptations are lean. They are small, quantitative changes to phylogenetically ancient attentional, temperamental, and domain-general cognitive processes. In common with other cultural evolutionary psychologies, such as those of Joseph Henrich and Michael Tomasello, the cognitive gadget theory emphasises the importance of social interaction in cognitive development, and of social cognition in explaining human ‘success’. But the alternatives are much closer to classical evolutionary psychology in assuming that the big drivers of cultural learning – for example, ‘norm psychology’ and ‘shared intentionality’ – are genetic adaptations. In terms of methodology, the alternatives are closer to classical evolutionary psychology in favouring personal over sub-personal levels of explanation, and non-comparative over comparative theory evaluation.



Larissa Mendoza Straffon

Human Cognition: species or culture specific?

Implicitly or explicitly, most models of human cognitive evolution suggest that the mental abilities that seem unique to our species gave us an edge over extinct hominins (Langbroek 2012). Recent archaeological and genetic data, however, suggest that several of those species, particularly Neanderthals and Denisovans, likely had cognitive capacities not unlike ours (Breyll 2020). This raises several challenges for cognitive evolution studies. For one, it calls into question the assumption that there is something truly distinctive about sapiens cognition. Therefore, claims of the uniqueness of modern cognition need to specify not only what constitutes its distinctiveness but also suggest the possible selective contexts that allowed for such aspects of cognition to evolve only in our species.

The other possibility, that there is nothing qualitatively different about modern human cognition, is implied in recent claims of the deep phylogeny of language and symbolism going back at least to *H. erectus* (Barham & Everett 2020). This in turn would indicate that most cognitive differences between closely related *Homo* species may be attributed to sociocultural and environmental factors, since these play such an important role in shaping cognition among extant humans. If indeed, human cognition is not species-specific but culture-specific, we need to focus our attention on the processes of cultural evolution to explain it (Bender 2020; Heyes 2018). It also means that insights from anthropology, developmental psychology, cross-cultural studies, and artificial learning, among other fields, are key to understand the tangible differences between and within the archaeological records of past hominin populations.

References:

- Barham, L., & Everett, D. (2020). Semiotics and the origin of language in the Lower Palaeolithic. *Journal of Archaeological Method and Theory*, 1-45.
- Bender, A. (2020). The role of culture and evolution for human cognition. *Topics in cognitive science*, 12(4), 1403-1420.
- Breyll, M. (2020). Triangulating Neanderthal cognition: A tale of not seeing the forest for the trees. *Wiley Interdisciplinary Reviews: Cognitive Science*, e1545.
- Heyes, C. (2018). *Cognitive gadgets: The cultural evolution of thinking*. Harvard University Press.
- Langbroek, M. (2012). Trees and ladders: A critique of the theory of human cognitive and behavioural evolution in Palaeolithic archaeology. *Quaternary International*, 270, 4-14.

Samir Okasha

Can Adaptiveness and Rationality Part Ways?

his paper asks whether adaptive behaviour necessarily corresponds to rational behaviour, and if not why not. “Rational behaviour” is here understood as behaviour that satisfies the norms of traditional rational choice theory, e.g. transitivity of choice, avoidance of dominated strategies, etc. (Thus non-human organisms are perfectly capable of behaving rationally, in the sense of the term used here.) “Adaptive behaviour” is understood in the usual way, as behaviour that has evolved by natural selection because of its fitness-enhancing features in a given environment. It is natural to think that rational behaviour, as understood here, should go hand-in-hand with adaptive behaviour. For if an organism behaves rationally, then it follows (from well-known results in rational choice theory), that they behave as if trying to maximize a utility function. And if an organism behaves adaptively, then it follows (by definition) that they behave as if they are trying to maximize their Darwinian fitness (given the constraints that they face). Therefore, by defining utility as fitness, it seems that it should be possible to make adaptive behaviour coincide exactly with rational behaviour. This coincidence has been explicitly defended by a number of authors, including Daniel Dennett. Moreover, the adaptiveness-rationality coincidence is implicitly assumed by evolutionists whenever they treat an organism as having a goal (such as survival) towards which its evolved behaviour conduces; this is a common mode of analysis in evolutionary biology. However, certain theoretical considerations suggest that the adaptive and the rational can sometimes “part ways” (to use Brian Skyrms’ expression), that is, that fitness-maximizing and utility-maximizing behaviour may fail to coincide. Arguments to this effect have been found in the literature of philosophy of science (Sober, Skyrms), behavioural ecology (McNamara and Houston), and economic theory (Güth, Robson and Samuelson). This paper examines six such arguments and reflects on what they teach us. The paper draws on material from my recent book, *Agents and Goals in Evolution* (OUP 2018)

Mason Youngblood

Inferring Cognitive Phenomena from Cultural Evolutionary Patterns

ne of the fundamental ways in which culture has shaped humans and other animals is by introducing selection for cognitive processes that influence the adoption and transformation of cultural variants. For example, transmission biases, or biases in social learning that predispose individuals to favor particular cultural variants, are important selective forces that can result in significant changes at the population-level. Generative inference, a recently-developed framework for comparing the output of agent-based simulations to real data, is particularly well-suited for assessing how these biases influence evolutionary patterns. First, I will review previous applications of generative inference in cultural evolution, and present some new research I have been doing to assess how transmission biases influence the cultural evolution of music and birdsong. Then, I will close with some ideas for how generative inference and related methods could be extended to investigate other cognitive phenomena, such as invention, guided variation, and cultural attraction.