



Tuesday, June 24th, 11:45-12:15, room 301

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Scaffolding Language: Words, Tools and the Transmission of Acquired Information

Keywords: evolution of cognition, origins of culture, extended mind, learning, cultural basis for cognition, technical vocabulary, cross generational information transmission, concepts

Standard models of human evolutionary development imagine a mind that has become finely tuned to solving longstanding ecological and social challenges through the development of domain specific hard-wired information processing modules. These modules, which often include a language acquisition component, locate the transition to behavioral modernity strictly in terms of biological adaptation. In this paper, I will argue that this model centrally underestimates the role of environmental and social factors in determining the development of culture and behaviorally modern lifeways.

Kim Sterelny (2012) has argued that the fundamental difference between human and animal minds can be defined in terms of the potential for high fidelity, high volume information transmission between generations. The plausibility of this account centrally depends on an understanding the methods in which information may be transmitted between individuals. I will argue that it is the emergence of language, as a method of both collecting adaptively valuable information (as a medium of information storage) and as a reliable and fine-grained conduit for information transmission, that facilitated and promulgated the transition to behavioural modernity in humans.

Accordingly, this view locates the transition to behavioral modernity not in any specific biological adaptation, but rather in the new ecological landscape that language provides. Language provides a method for externalizing and communicating information in ways that permit the accumulation of adaptive information.

On Sterelny's model, cross-generational information transmission requires the development of environments which aid in this transmission. Tool making happens in tool shops where the relevant materials are gathered and ordered in instructively valuable ways. In this way, the environment can itself take on part of the discursive role of transmitting information between experts and apprentices. I argue that this is a valuable model when applied to language. The development of specialized or technical vocabularies can function in much the same way. We do not merely observe the construction of new tools or methods of resource gathering, we develop ways of talking about them that enable us to distinguish between effective and fruitless variations of similar ideas. Language can thus be used as a scaffold towards more fine-grained or detailed information transfer.



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I argue that this model allows us to characterize the evolutionary development of human cognition in ways that avoid the need for any biologically central scale tipping moment. Instead, it is the accumulation of trial and error learning coupled with the means to pass it along that accounts for the uniqueness of human cognitive and cultural life.