

A post-Darwinian account of symbol system construction.

This paper argues that asking 'how has language evolved?' is better reformulated as 'how have acts of speaking-through-symbols been constructed and elaborated?'¹. Two central consequences of this reformulation are that 'language', in fact, does not evolve, and even if it did, the Darwinian account of evolution is inadequate to account for its elaboration. A more adequate account of what has been subsumed in the phrase 'language evolution' is available in the conceptual framework of Jacob von Uexküll² and its modern reincarnation in the paradigm of niche construction³. These conceptualisations relocate the locus of 'where the action is' away from the organism as the unit of selection to the relation of the organism to its environment, this relationship being instantiated in what von Uexküll termed the organism's Umwelt.

In von Uexküll's framework, organisms do not respond to casual events in the environment, but to perceptual signs or meanings⁴. This point is also there in the approach of Mead⁵. Any sign or meaning logically entails other meanings, and these other meanings constitute an epigenetic pathway that needs to be discovered. This discovery is made possible by symbols. Hence the questions of how symbols and symbol systems are a) established, and b) elaborated in use, come to the fore. There has been a great deal of work put in on the first of these questions, and with the recent discovery of mirror neuron systems in humans, the evolutionary questions with respect to human symbol capability can be broadly settled⁶. The second question has received less attention.

How might this second question be best formulated with respect to phylogeny? A clue is provided from the ontogenetic domain through the amount of mileage developmental psychologists have recently got from Vygotsky's elucidation of the 'zoped' which is interactively worked-in by a more skilled practitioner in their dealings with a less skilled novice⁷. To get any traction on phylogenetic questions requires figuring out how zopeds might be constructed *sui generis* in the interactions between two equally unskilled novitiates. This can be done by drawing the ideas of Mead, Vygotsky, Gibson⁸, and von Uexküll into a nexus that underwrites the 'how' of the evolutionary elaboration of symbol systems.

The resulting framework for the elaboration of symbol systems is that Umwelts are a) logically pregnant with the possibilities of their future elaboration; b) informed, for humans, with a grasp of the intentionality of conspecifics; c) have symbols pre-informing them; and d) the products of past activities inter-generationally conserved in them⁹. The final piece that prods possibility into actualisation is almost certainly the re-organisation of social interaction that was a consequence of changes in the parameters of the spatial dimension of human life: firstly in the relinquishing of sedentary life with the initial migration out of Africa; secondly with the transfer of materials between separate groups; and thirdly in the re-adoption of sedentary life and house-dwelling with the growth of agriculture¹⁰.

1. cf Harris, R. (1980) *The language makers*. London: Duckworth; Olson, D.R. (1994) *The world on paper: the conceptual and cognitive implications of writing and reading*. Cambridge: Cambridge University Press.
2. e.g. von Uexküll, J. (1957) A stroll through the world of animals and men: a picture book of invisible worlds. In C.H.Sciller (ed.) *Instinctive behavior: the development of a modern concept*. New York: International Universities Press. Pp. 5-80.
3. e.g. Laland, K.N., Odling-Smee, F.J., and Feldman, M.W. (2000) Niche construction, biological evolution and cultural change. *Behavioral & Brain Sciences*, **23**:131-146.

4. cf. Bains, P. (2001) Umwelten. *Semiotica* **134**: 137-167
5. Particularly Mead, G.H. (1934) *Mind, self and society*. Chicago: Chicago University Press; (1938) *The philosophy of the act*. Chicago: Chicago University Press
6. References superfluous ☺
7. Vygotsky, L.S. (1978) *Mind in society: the psychology of higher mental functions*. Cambridge, MA: Harvard University Press
8. e.g. Gibson, J.J. (1979) *The ecological approach to visual perception*. Boston: Houghton-Mifflin.
9. cf. Lock, A. (1999) On the recent origin of symbolically-mediated language and its implication for psychological science. In M.C. Corballis and S.E.G. Lea (eds.) *The descent of mind: psychological perspectives on hominid evolution*. Oxford: Oxford University Press; (2000) Phylogenetic time and symbol creation: where do zopeds come from? *Culture and Psychology*6: 105-129; Tomasello, M. (2004) *The cultural origins of human cognition*. Cambridge, MA: Harvard University Press.
10. e.g. Gamble, C. (1993) *Timewalkers: the prehistory of global colonization*. Cambridge, MA: Harvard University Press; (1998) Palaeolithic society and the release from proximity: a network approach to intimate relations. *World Archaeology* **29**: 426-449; Wilson, P. (1988) *The domestication of the human species*. New Haven: Yale University Press.