

[Place, U. T. (2000). From icon to symbol: An important transition in the evolution of language [Abstract]. Proceedings of the 3rd International Evolution of Language Conference (pp. 183-184)). École Nationale Supérieure des Télécommunications.]

From icon to symbol: An important transition in the evolution of language

Ullin Place

Abstract

In constructing a speculative scenario for the evolution of language (Place forthcoming), I take it as axiomatic that before human beings developed the ability to communicate vocally, they communicated with one another by means of some form of sign language whose primary function was to organize the cooperative social activities involved in hunting and foraging. In such a language the signs would be entirely iconic, that is to say they would function as signs entirely by virtue of a resemblance between the sign and the object or movement it stands for. There would be no selective pressure to develop symbolic signs where the connection between the sign and what it stands for is purely arbitrary. However, studies of sign languages in general (Frischberg 1979) and of the homesigning developed by isolated deaf individuals in particular (Kuschel 1973) show that although the incidence of arbitrary symbols is much reduced as compared with vocal language, they are very much more common than would be predicted on this hypothesis. The explanation of this finding seems to be that AFTER the development of vocal language when the selective pressure for the development of symbolic signs was much greater due to the limited possibilities of representing objects and movements iconically, a genetic mutation occurred the effect of which was to give human beings a strong preference for communication by means of arbitrary symbols. The evidence for this mutation comes from a quite different source, from experimental studies that have been conducted in recent years within the behavior analytic paradigm on the phenomenon known as "stimulus equivalence" (Sidman 1971; 1986; 1990; Sidman and Tailby 1982). Associated with this is the work that has been done at the University of Wales, Bangor, (Dugdale and Lowe 1990; Horne and Lowe 1996) on the link between the emergence of stimulus equivalence responding in the child of 2-3 years and the so-called "naming explosion" observed by developmental psychologists which appears to occur at the point in development at which language "takes off" in the human child and fails to do so in its closest primate relatives.

References

Dugdale, N. and Lowe, C. F. (1990) "Naming and stimulus equivalence". In D. E. Blackman and H. Lejeune (Eds.) *Behaviour Analysis in Theory and Practice: Contributions and Controversies*. Hove and London: Lawrence Erlbaum Associates. pp. 115-138.

Frischberg, N. (1979). "Historical change: from iconic to arbitrary". In E. Klima and U. Bellugi (Eds.), *The signs of language*. Harvard University Press.

Horne, P. and Lowe, C.F. (1996) "On the origins of naming and other symbolic behavior". *Journal of the Experimental Analysis of Behavior*, 65, 185-241

Kuschel, R. (1973). "The Silent Inventor: The Creation of a Sign Language by the Only Deaf-Mute on a Polynesian Island". *Sign Language Studies*, 3, 1-27

Place, U. T. (forthcoming) "The role of the hand in the evolution of language". *Psychology*,

Sidman, M. (1971). "Reading and auditory-visual equivalences". *Journal of Speech and Hearing Research*, 14, 5-13.

Sidman, M. (1986). "Functional analysis of emergent verbal classes". In T. Thompson, N. Dugdale and M. D. Zeiler (Eds), *Analysis and Integration of Behavioral Units*. Hillsdale, N.J.: Lawrence Erlbaum Associates Inc., pp. 213-245.

Sidman, M. (1990) "Equivalence relations: where do they come from?" In D. E. Blackman and H. Lejeune (Eds.) *Behaviour Analysis in Theory and Practice: Contributions and Controversies*. Hove and London: Lawrence Erlbaum Associates. pp. 93-114.

Sidman, M.& Tailby, W.(1982). "Conditional discrimination vs. matching to sample: An expansion of the testing paradigm". *Journal of the Experimental Analysis of Behavior*,37, 5-22.