

## Evolutionary Psychology

www.epjournal.net – 2008. 6(2): 213-216

---

### Book Review

#### Evolingo, or Evolutionary Psychology Meets Linguistics

A review of Christine Kenneally, *The First Word: The Search for the Origins of Language*. Penguin Group: New York, 2007, US\$26.95, 357pp. ISBN 978-0-670-03490-1 (hardback)

Erika Hoff, Department of Psychology, Florida Atlantic University, Davie, FL, USA. Email: ehoff@fau.edu.

The capacity for language is central to what it means to be human and, thus, the question of how language came to be should be central to the question of human origins. For a long time, however, this question received no serious scientific attention. There were theories, to be sure—the “bow-wow” theory that language arose from imitations of animal calls, the “ding-dong” theory that language arose from imitations of physical noises, and the “heave-ho” theory that language arose from sounds accompanying physical exertion (see Pinker and Bloom, 1990). But these theories were speculations, and scientific study of the evolution of a phenomenon that leaves no physical artifacts or fossil traces seemed hopeless when the primary method of research was literally to dig for clues. One indication of the stature of the field 150 years ago is the famous ban on any papers concerning language origins issued by the Linguistic Society of Paris in 1866.

Two developments in the later half of the 20<sup>th</sup> century changed the scientific landscape in a way that laid the groundwork for a new approach to the study of language origins. First, Noam Chomsky asserted that language was a property of the human mind, thus bringing linguistics into psychology and creating a field known as psycholinguistics, now more frequently referred to as the psychology of language. Then Leda Cosmides and John Tooby asserted that the mind, no less than the body, is the result of natural selection, thus bringing evolution to psychology and creating the field of evolutionary psychology. Together, the premises of these two fields raised the question of how language evolved. As linguists became interested in the question, the field of evolutionary linguistics (or evolingo to insiders) emerged, and as these theoretical developments made the question of language origins legitimate, developments in related fields of science made the study of language origins potentially fruitful. Researchers in animal intelligence and communication, genetics, neurobiology, computational modeling, and developmental psychology all contributed to the enterprise. The study of how language came to be is now an active field.

In *The First Word: The Search for the Origins of Language*, Christine Kenneally describes the history and current state of this enterprise for a general audience. The task she has undertaken—describing to nonscientists the several highly technical fields that address this topic—is formidable. Kenneally does it very well, clearly supported by both her skills as a free-lance journalist and her Ph.D. training in linguistics. The first four chapters of the book focus on four researchers or research teams who have staked out different positions on the issue. The book begins, appropriately, with linguist Noam Chomsky who started the modern study of language. Chomsky has historically been associated with the position that the human language capacity is a self-contained module, separate from other cognitive abilities and unrelated to the communicative purposes to which language just so happens to be put. How this module came to be is not particularly of interest to Chomsky, and he has publicly and frequently expressed reservations about the value of considering the question.

The focus of the second chapter is Sue Savage-Rumbaugh, who has taught a language-like communication system to a bonobo and who sees language as a communicative system that has roots in and shares features with the communicative capacity of apes. The third chapter focuses on the psychologists Steven Pinker and Paul Bloom, who gave the topic of the evolution of language prominence in current psychology with their coauthored article (1990), “Natural language and natural selection” (Pinker and Bloom, 1990). They argued that language is an evolved capacity. In making this argument, Pinker and Bloom took on not one but two titans: the linguist Chomsky and the evolutionary theorist Stephen Jay Gould, who both argued that language *per se* is not an adaptation but rather a byproduct of other adaptations (e.g., a large brain).

The fourth of these first chapters is devoted to Philip Lieberman, who was a student in the first class Chomsky taught at MIT, but who pursued the biophysics of speech and the continuity between nonhumans and humans—which is completely antagonistic to the Chomskyan position of the human language capacity as a separate module of the mind.

The position that Kenneally assumes in this book is probably the most widely-held view in the field—that the human capacity for language is made up of multiple abilities, each with its own evolutionary history. The central components of what Kenneally refers to as “the language suite” are the social-cognitive capacity to have communicative intentions, the capacity for reference, and the capacity to produce and interpret structured sequences. These capacities are realized in speech or gesture. Each capacity has an evolutionary history and precursor abilities that can be seen in other species. Each capacity is represented in the brain and coded for in the genome. Chapters 5 through 11 are surveys of the research in these areas.

This is an inspired way to organize the book because it allows the author to address, on its own, each fascinating area of related research—communication in apes, mirror neurons, the basal ganglia, linguistic structure, and the FOXP2 gene, to name a few. Exactly how all these component abilities fit together and add up to the human capacity for language is not clear, but it wouldn’t be fair to ask Kenneally to do what no one else has yet done. Five final chapters are devoted to discussing the processes of biological and cultural evolution and suggesting where the field of language origins will move in the future.

Kenneally interviewed many of the major players in the field for this book, making it fascinating and informative to readers with a wide range of familiarity with the issues. These interviews provide a peek backstage. We read, for example, how Paul Bloom, when he was the new kid on the block, was nervous before his scheduled debate with Chomsky

and Gould. We learn that when Simon Kirby first began his work on computational modeling of language evolution at the University of Edinburgh in the 1980s, no one in his department could read email while Kirby was running his simulations because they tied up all the available computing power. There is an epilogue in which several major figures in this field answer the same question posed by Kenneally—if a group of babies were isolated but somehow managed to survive, would they produce language when they grew up? The answers indicate the range of positions currently held by researchers in the field, and include both “No.” and “Yes.” The answers in the affirmative make reference to a host of necessary conditions, including having a reason to communicate with each other and managing not to kill each other first.

Readers in related scientific fields might sometimes wish for more citations to the primary literature. Kenneally makes some statements as though they were widely accepted facts, when sometimes they are definitely not widely accepted and sometimes they may not be facts at all. One claim not widely accepted is that all animals can connect sounds to referents. Kenneally does not mention that the question of whether language-trained chimpanzees truly use their signs to refer as opposed to producing them to obtain rewards has been a hotly debated question. Sometimes major disagreements are relegated to footnotes, as with the question of whether dolphins have signature whistles that function as names for themselves. Kenneally attributes to unnamed “researchers” the widely-promulgated but inaccurate claim that when babies babble they produce all the possible sounds in all the languages of the world. Kenneally refers to Gary Marcus’s article on descent with modification (Marcus, 2006) without sufficiently giving credit to Elizabeth Bates, who argued for years that language is a new machine built out of old parts (e.g., Bates, Thal, and Marchman, 1991) and who was dismissed by many of the researchers highlighted in this book.

These may be minor quibbles, given the overall excellent job that Kenneally has done. This book is readable, interesting, and well represents the field of evolutionary linguistics. Researchers in evolutionary psychology who have not been reading in this area can find out what they have been missing. Researchers in evolutionary linguistics can recommend this book and give it to their relatives as gifts, without worrying that they are promulgating all sorts of wrong ideas. One finishes Kenneally’s book out of breath from the pace of the research in the field; virtually all the science it describes has been accomplished in the last 30 years. The study of the evolution of language has sufficiently recovered from its banishment by the linguists in 1866 to be the topic of its own annual conference, now its 7<sup>th</sup> year (Smith, Smith, and Ferrer i Cancho, 2008). Even the doubter, Noam Chomsky, is quoted as saying after a meeting in 2005, “I wouldn’t have guessed it could go so far (p. 80).”

## References

- Bates, E., Thal, D., and Marchman, V. (1991). Symbols and syntax: A Darwinian approach to language development. In N.A. Krasnegor, D.M. Rumbaugh, R.L. Schiefelbusch, and M. Studdert-Kennedy (Eds.), *Biological and Behavioral Determinants of Language Development* (pp. 29-66). Hillsdale, NJ: Erlbaum.
- Marcus, G.F. (2006). Cognitive architecture and descent with modification. *Cognition*, 101, 443-465.

*Evolingo*

- Pinker, S., and Bloom, P. (1990). Natural language and natural selection. *Behavioral and Brain Sciences*, 13, 707-784.
- Smith, A.D.M., Smith, K., and Ferrer i Cancho, R. (2008). *The Evolution of Language: Proceedings of the 7<sup>th</sup> International Conference (EVOLANG7)*. Singapore: World Scientific Publishing Co.