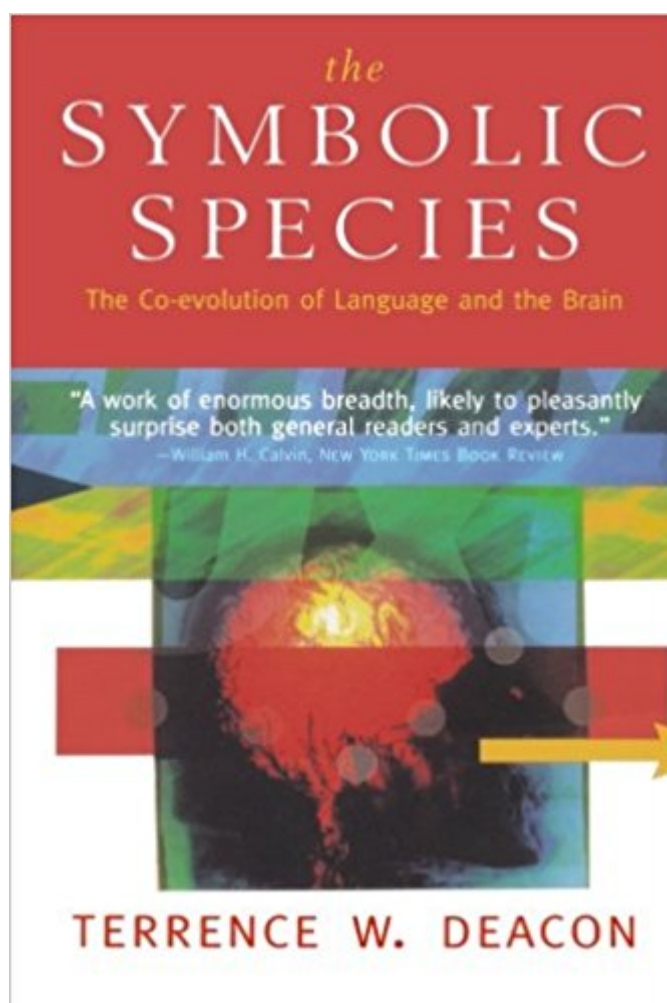


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# The Symbolic Species: The Co-evolution Of Language And The Brain



## Synopsis

"A work of enormous breadth, likely to pleasantly surprise both general readers and experts." —*New York Times Book Review* This revolutionary book provides fresh answers to long-standing questions of human origins and consciousness. Drawing on his breakthrough research in comparative neuroscience, Terrence Deacon offers a wealth of insights into the significance of symbolic thinking: from the co-evolutionary exchange between language and brains over two million years of hominid evolution to the ethical repercussions that followed man's newfound access to other people's thoughts and emotions. Informing these insights is a new understanding of how Darwinian processes underlie the brain's development and function as well as its evolution. In contrast to much contemporary neuroscience that treats the brain as no more or less than a computer, Deacon provides a new clarity of vision into the mechanism of mind. It injects a renewed sense of adventure into the experience of being human.

## Book Information

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## Customer Reviews

Terrence Deacon's *The Symbolic Species* begins with a question posed by a 7-year-old child: Why can't animals talk? Or, as Deacon puts it, if animals have simpler brains, why can't they develop a simpler form of language to go with them? Thus begins the basic line of inquiry for this breathtakingly ambitious work, which attempts to describe the origins of human language and consciousness. What separates humans from animals, Deacon writes, is our capacity for symbolic representation. Animals can easily learn to link a sound with an object or an effect with a cause. But

symbolic thinking assumes the ability to associate things that might only rarely have a physical correlation; think of the word "unicorn," for instance, or the idea of the future. Language is only the outward expression of this symbolic ability, which lays the foundation for everything from human laughter to our compulsive search for meaning. The final section of *The Symbolic Species* posits that human brains and human language have coevolved over millions of years, leading Deacon to the remarkable conclusion that many modern human traits were actually caused by ideas. Deacon's background in biological anthropology and neuroscience makes him a reliable companion through this complicated multidisciplinary turf. Rigorously researched and argued in dense but lively prose, *The Symbolic Species* is that rare animal, a book of serious science that's accessible to layman and scientist alike. --This text refers to an out of print or unavailable edition of this title.

A neurologist and anthropologist with Harvard Medical School, Deacon considers why language is confined to humans and why no simple languages exist. He proposes that symbolic reference is both the defining feature of language and the principle cause for the expansion of the human prefrontal cortex. This "evolutionary anomaly" has, in turn, given rise to a brain that is biased to use an associative learning process critical for language success. Deacon also suggests that human-reproduction demands may have been the driving selection factor that led to symbolic communication. In presenting his theory, Deacon challenges many of the ideas of Noam Chomsky and, more recently, Steven Pinker (*The Language Instinct*, LJ 2/1/94), who argued for the existence of an innate "Universal Grammar." Directing his book at a scientific audience, Deacon blends a knowledge of neurobiology, anthropology, linguistics, and philosophy into an original, well-argued, compelling theory of language development. Complex and extremely challenging, this book should receive considerable review attention. Highly recommended for academic and major public libraries. ?Laurie Bartolini, Legislative Research, Springfield, Ill. Copyright 1997 Reed Business Information, Inc. --This text refers to an out of print or unavailable edition of this title.

**Best Explanation of Evolution of Language**Two puzzles in the evolution of language are explained by Terence Deacon in *The Symbolic Species* (1997). Why does symbolic communication seem easy for humans yet almost impossible for other animals? And how and why did language develop in its original milieu of small hunter-gatherer bands? Deacon believes the brain tripled in size because it co-evolved with language for the sake of symbolic communication. Deacon's section on language raises a puzzle: why do no animals use a simple language? Animals don't have language because even a simple

language requires the use of symbols, one word (or gesture) standing for another. Symbols seem easy for humans but are extremely difficult for other animals. Deacon then describes the enormous complexities of the human brain. But this leads to the other puzzle: how and why did this complex brain evolve in its original hunter-gatherer milieu? Deacon's answer is that language co-evolved with the human brain specifically to foster symbolic communication. And symbolic communication was caused by the unique challenges of a bipedal lifestyle, especially sexual selection. Bipedalism forced hominids to live in cooperative groups for scavenging, hunting and defense against predators. Meat from large prey had to be shared, but sharing food does not come easily to any animal. And life on the ground in a multi-male multi-female group was very different from life in the trees. This new lifestyle caused physical changes, such as the loss of estrus, loss of hair, face-to-face intercourse, and female orgasm. It also created other challenges. Who mates with whom? Who rears and protects children? What dominance hierarchies will exist, if any? Deacon points out three consistent facts about human reproduction today: 1) both males and females usually assist in child-rearing; 2) a great majority of adults are pair-bonded to a member of the opposite sex; 3) these exclusive sexual relationships are maintained within a multi-male and multi-female social group. However, this social structure was unprecedented. It required new behaviors and better methods of communication. For pair-bonded adults, the selection of the fittest partner for an extended relationship of child-raising became critical for genetic success and encouraged more sharing of information about potential partners. Meat-sharing required reciprocity and the remembering of the past behavior of individuals to detect and control cheaters. These new communication needs for information about individuals were created by bipedalism and led to a new mode of communication by symbols, i.e., language. Deacon offers convincing explanations of these two puzzles in the evolution of language.

Another big name comes to the front in NCC. THEORY: DEACON. There is true substance in this volume; plenty to sink your teeth into. He jumps right in and gives you the ten steps to the language/brain dialectic, immediately, so you've got a picture of where his system is going. He links philosophy and neuroscience next; in order to present a dynamic with the subject as "mediator" between "sign" and "reference", but then takes you to unusual stages of constructing "sense" and "positing" the referent. Pretty accurate I would say. He's up on his phenomenology as well and gives us a detailed breakdown of the methodology employed by the mediating subject. And then the jump to NCC THEORY. But first NCC influences from gene- evolution and then regional discussions of the prefrontal cortex. And all of this contributes toward the construction of the "interpretant filter"

through which all mediation begins. The presentation is very systematic, risk-taking, multi-dimensional, and responsible. You'll be able to put together an excellent organized picture of the entire enterprise with this well-thought-out presentation. You'll take tons of notes to keep up, but it's worth it. I think he plugs in well with ramachandran and his IPL. Language loop. They compliment each other. I recommend this book as equally as strong as ramachandran - that's saying something. Get it and start taking notes.

Reading only one or two pages into this book already makes it clear that this is a work by an exceptionally well informed and disciplined writer; and reading to the end does not disappoint at any time. This is a tightly argued serious scientific thesis by a professor of biological anthropology with an encyclopedic knowledge of linguistics, neurophysiology, neuroanatomy and human evolution. It is an original work in which Deacon sets out his arguments and marshals the evidence for a comprehensive theory in a methodical and structured way. It is not for the faint hearted, and reading it demands careful attention to the tightly written dense structured prose; it is not repetitive and the logical structure of the arguments is architectural, so that careful reading and a good memory are essential. Useful diagrammatic illustrations help to make some of the concepts easier to grasp. The effort is worth every moment. Deacon's conclusions have consequences for philosophy and theory of mind no less than for the central area of linguistics and the evolution of human intelligence. This book has done more to shape and to consolidate my knowledge of who we as a "symbolic species" are than any other I have read in this decade. Strongly recommended.

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