

[Appeared in *Glott International* 4, 2, February 1999, p. 12.]

RECENT ISSUES IN LINGUISTICS

Elan Dresher

Invasion of the Language Viruses

Time was when one could write a book about language learning or the evolution of language without taking into account the linguistic theories of the day. This has been changing, thanks to the work of Noam Chomsky over the past forty years, and to writers like Ray Jackendoff (1994), David Lightfoot (1982), and Steven Pinker (1994), whose books have established the relevance of linguistic theory to mainstream discussions of human psychology and the nature of the mind. Judging from a recent book by Terrence Deacon, however, there is still a long way to go before the actual contents of linguistic research penetrate beyond the circle of its practitioners and become common currency in the wider intellectual culture.

Deacon's *The symbolic species: The co-evolution of language and the brain* is an impressive tour de force through neuroscience, ethology, palaeontology, anthropology, evolutionary theory, and much else. The blurbs on the back cover proclaim this to be a "superb and innovative look at the evolution of language" and "the best book yet written on the evolution of language." "*The Symbolic Species* should transform the foundations of the human sciences." Ralph L. Holloway, an anthropologist who has reviewed the book in *American Scientist*, writes that it is "a nonpareil," "just leaps and leaps above other evolution-of-language books published during the past five years."

Despite its brilliance, Holloway imagines that there will be parts "picked at by linguists," and no wonder. Before we have even opened the book we read that "Deacon has mounted a serious challenge to the neo-Chomskians...This is theoretical dynamite, planted deep under the walls of the neo-Chomskian fortress." The picking, not to mention the hurling down of arrows, stones, and burning oil, is well underway in Derek Bickerton's review in *New Scientist*. Needless to say, it will continue here.

Deacon's book is divided into three parts. The first part, to which we will return shortly, is on language. Part two is full of interesting information on the brain, including a survey of the neural bases of language and speech. Part three, "Co-Evolution," is quite literally science fiction in the strict sense of the term, in which Deacon advances a scenario for how the transition to language and symbolic reference might have occurred in early hominid communities.

With respect to language, Deacon (102 ff.) accepts the claims of linguists that language learning presents a very difficult problem, and he presents a respectable version of the argument from the poverty of the stimulus that children's experience does not suffice to account for their acquisition of language. Nevertheless, he believes that "innate Universal Grammar is a cure that is more drastic than the disease." Though he agrees that "human brains come into the world specially equipped" to acquire language, he rejects the "preformationist" interpretation of innateness as involving an innate "language competence," or "rules in the brain."

If neither experience nor innate principles explain language acquisition, where else can the required grammatical knowledge be? Deacon proposes (105) that "the extra support for language learning is vested neither in the brain of the child nor in the

brains of parents and teachers, but outside brains, in language itself." In other words (109), "Children's minds need not innately embody language structures, if languages embody the predispositions of children's minds!"

Why did nobody think of this before? Perhaps because this position appears to have untenable, not to say absurd, consequences. Deacon is undeterred; languages are like living organisms that must be studied in evolutionary terms. He goes on (111): "In some ways it is helpful to imagine language as an independent life form that colonizes and parasitizes human brains, using them to reproduce." Languages "might better be compared to viruses... [which are] minimally packaged strings of DNA or RNA."

Deacon invokes the name of August Schleicher, an important nineteenth century linguist who viewed languages as natural organisms, like plants or animals. As Lightfoot (1999: 35, 227) points out, Schleicher (1863) was influenced in this regard by Darwin. Deacon takes up Darwin's idea that languages tend to change under pressure of natural selection in the direction of having shorter, "easier" forms. (Darwin 1874: 88-92). Deacon stresses (109): "Languages don't just change, they *evolve*...Languages are under powerful selection pressure to fit children's likely guesses" [emphasis in original/BED]. Thus, languages are easy for children to learn because they evolved in such a way that they match children's biases. "The key to understanding language learnability...lies in...language change" (115).

David Lightfoot's new book, *The development of language: Acquisition, change, and evolution*, sets out to show that this view - that the principles of language are to be sought in a theory of change - is a major fallacy that has deep roots in the nineteenth century, the "century of history," and continues to influence some linguistic research to this day. This view is mistaken because languages are not plants or animals, or even viruses. They have no DNA, they do not pass through fixed stages of development from infancy to death. Even asserting that "they" do not do these things is not quite correct: there is simply no "they" there that can have these properties.

Moreover, contrary to Deacon's repeated assertions, there is not a shred of evidence from language change that languages evolve. The language faculty may well have evolved, and for all we know languages at some distant prehistoric stage may have been different from modern languages. However, we cannot reach any such hypothesized pre-languages through the study of language change or the reconstruction of any ancient or proto-language accessible to us.

One might well wonder what it is that Deacon finds so unacceptable about the notion of innate universal grammar (UG) that he would rather leap into this particular abyss. Indeed, what is the difference between endowing children with UG and attributing to them certain biases or predispositions to guess? Deacon writes with such authority about so many technical subjects that one is reluctant to say this, but there is a hollow space at the linguistic core of this book. In the places where concrete linguistic examples ought to be, Deacon gives us analogies and parables: Languages are like user-friendly Macintosh computers that are easy to operate; or a language is like a rigged Roulette wheel that consistently lands on numbers that an unwitting gambler tends to bet on.

In contrast to his discussion of the brain, which is admirably clear and precise, Deacon's references to grammatical principles are extremely vague. According to him, the theory of UG posits "axiomatic rule systems" that specify "grammatical operations," and invariant "deep structures" or "deep grammatical logic." Deacon

argues (333) that these “deep” principles of UG are highly variable at the surface, and so they could not have evolved specific neural supports, and “are ineligible to participate in Baldwinian evolution!”

Elsewhere, however, he suggests (339) that “the best candidates for innate language adaptations turn out to be some very general structural characteristics of ...speech, and the computational demands this medium imposes when it comes to symbolic analysis.” But many proposed principles of UG have a computational and structural character, and they may well be associated with invariant (though not necessarily transparent at the surface) cues. Thus, even if we agree that every aspect of UG must be adaptive, as required by Baldwinian selection (but see Lightfoot 1999: 243f. for some UG conditions that may be maladaptive), we must reserve judgement about whether UG could have evolved until we have put some concrete examples on the table. And until spelled out further, we may suspect that the difference between “UG principles” and “children’s biases” are largely terminological.

Terminology may also be responsible for Deacon’s distaste for the notion of a “language organ” or special linguistic faculty. He appears to interpret such terms as implying that language came about through the addition of some special component to the primate brain, like plugging in a graphic card to a computer. There is, of course, no neuroanatomical support for this view, but UG theorists never intended this image to be taken literally at the neural level.

I think we can come to a compromise here. Linguists will agree to replace the phrase “X is an innate principle of UG” with “X is a persistently lucky guess resulting from an unavoidable and ubiquitous innate bias.” For their part, the evolutionary neuroscientists will put the language viruses back in the jar.

References

- Bickerton, Derek. 1997. Babel’s cornerstone [Review of *The symbolic species* by Terrence Deacon]. *New Scientist* 156, Oct. 4, 1997: 42-3.
- Darwin, Charles. 1874. *The descent of man*, 2nd edn. New York: D. Appleton, 1889.
- Deacon, Terrence W. 1997. *The symbolic species: The co-evolution of language and the brain*. New York: W. W. Norton & Company.
- Holloway, Ralph L. 1998. Language’s source: A particularly human confluence of hard wiring and soft [Review of *The symbolic species* by Terrence Deacon]. *American Scientist* 86, Mar.-Apr. 1998: 184-6.
- Jackendoff, Ray. 1994. *Patterns in the mind: Language and human nature*. New York: Basic Books.
- Lightfoot, David. 1982. *The language lottery: Toward a biology of grammars*. Cambridge, Mass.: MIT Press.
- Lightfoot, David. 1999. *The development of language: Acquisition, change, and evolution*. Oxford: Blackwell/Maryland Lectures in Language and Cognition 1.
- Pinker, Steven. 1994. *The language instinct: How the mind creates language*. New York: William Morrow.
- Schleicher, August. 1863. *Die darwinische Theorie und die Sprachwissenschaft*. Weimar: Hermann Böhlau.