REVIEWS

Daniel L. Everett, *How language began: The story of humanity's greatest invention*. New York: W. W. Norton, 2107. Pp. xviii + 306.

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This new book by Daniel Everett stands as a significant contribution to the discussion of language evolution because it puts forward the strongest claims so far in what has been an important exchange, probably the most visible in recent years. While *How Language Began* (henceforth *HLB*) is written for a general readership, the main proposals are presented clearly, drawing the lines of the debate sharper than in previous turns. Its strong hypotheses now set the stage for better understanding the points in contention and for drawing us closer to resolving them.

Crucially, the first chapters chart a space of common ground with other approaches to the study of human evolution:

- the endorsement of a materialist (evidence-based) approach to the natural science of language, and the centrality of natural selection and sexual selection as mechanisms of change;
- the systems that arise should not be considered to be optimal in their design,
- the out-of-Africa hypothesis, and against polygenesis;
- following from the above, the gradual emergence of language capabilities (as opposed to a saltationist view);
- that the faculty of language$_{(narrow)}$ consists of more than recursive procedures; and,
- most importantly, the requisite participation of cultural/conceptual knowledge and communicative function as forces that drove the emergence of language in the Environment of Evolutionary Adaptedness. In other words, it is unlikely that the core of linguistic competence (the narrow subset of the language faculty), as it emerged in humans, can be restricted to recursion.

On this overall framework, in fact, the book's proposal takes issue with only one of the currents within Universal Grammar (UG), albeit the one that is considered as the 'mainstream' current (Hauser, Chomsky & Fitch 2002).

Beginning in the Preface, the main idea is outlined: that no component of language ability is subserved by language-specific genetic endowment, against the view favored by research approaches associated with UG. Rather, cultural (learning) factors account for all aspects of language emergence in our species and today in language acquisition. To be clear, the alternative to the view that the source of all knowledge and skills acquired by developing children is culture, and

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is domain-general, is the view that SOME of these acquisitions are domain-specific (no credible theory in cognitive science makes the claim that ALL are structured by self-contained domain-specific modules).

According to the hypothesis in *HLB*, since there exists no genetic inheritance specific to language that is passed on as biological endowment, language depends on the evolutionary advance of domain-general cognitive capacities put to use in the cultural transmission of all aspects of language ability, both competence components and processing skills. From this point of view, the disagreement is not about nativism *per se*, but rather about proposals for learning and acquisition predispositions that are supported by two different kinds of system: (i) an architecture that includes both domain-specific and domain-general capabilities, or (ii) one consisting of domain-general capabilities only. In (ii) the cognitive-general faculties evolved, in the strict biological sense; in hypothesis (i), both types of faculty did. Therefore, on the idea that modern humans inherited evolutionary advances from other species of *Homo* (113), if this inheritance is taken in the biological sense, it would refer to (ii). Biological inheritances related to language ability, according to *HLB*, would have been passed along strictly via the cognitive-general faculties, or understood as cultural inheritance (learning and cross-cultural influence when communities came into contact). Chapter 12, however, leaves open the possibility of a language-specific descent in evolution: 'result of a form of linguistic natural selection' (271) in the transition to *sapiens*-level language ability.

As readers will be reminded, the study of language evolution relies on the evaluation of evidence of the most remote and indirect kind, discussion about origins giving new meaning to the word speculation. But its value, as is confirmed in this book, lies in the need to build conceptual models that are consistent. If one's theory of language acquisition, for example, cannot make contact with at least one plausible theory of evolution and if all evolutionary hypotheses appear to be at odds with it, there is reason for serious reflection. A good example of an attempt at the synthesis of theory of language and evolutionary hypothesis is Mithen (2006). In effect, *HLB* does draw a close parallel with the strong challenge to UG from the author's research project in the Amazonia. Even though the Pirahã language project and the beginning of the debate in Everett's critique of Hauser et al. (2002) appears at first to be the elephant in the room, by the end of Chapter 4 the connection is clear and explicit. For this reader, one aspect of this connection came as a surprise.

Within the genus *Homo*, the emergence of our species, *H. sapiens*, evolving to anatomically modern humans, has been generally viewed by evolutionary scientists as coinciding with the formation of language ability, a language faculty in its full expression. Precursors to the capacity for language can be traced, hypothetically, to trajectories of approximation in closely related archaic species, ancestral to *H. sapiens*, e.g. *H. erectus*, appearing approximately 1.9 million years ago. While modern humans coexisted in time and came into contact with some of these other hominid species, all of them are now extinct. For a graphic view of the time scale of the emergence of the one remaining species of the genus

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in relation to its predecessors, from whom it branched off, see the figure in Stringer (2012), which is entirely compatible with Everett's Figure 2 on page 19. But the controversial hypothesis that the book favors is that the formation of language ability corresponds to *erectus*. This emergence does not represent an antecedent or precursor, but the evolutionary epoch when the capacity of language was formed. The attainment of language ability in *sapiens* is considered, then, an improvement, 'more advanced', with a 'larger vocabulary' and 'probably more complex (hierarchical and or recursive) syntax' (62). The description of *erectus* communication is that of a 'full language', WITH SPEECH, although many readers will recognize it as an example of protolanguage, even based on the features that are speculatively attributed to it. The portrayal in *HLB*, based on what we know of *erectus* material culture, cranial capacity and primitive vocal capabilities, is by all measure highly generous, but we can accept it for now, for argument sake, to see where it leads. Here, a key element of the argument for 'full language' status for *erectus* is that the concept of protolanguage does not apply.

Following up on this idea, beginning in Chapter 3, we take note of a line of comparisons that draws a parallel between *erectus*-era communication and the grammar of certain modern languages spoken today, 'good enough . . . depending on the needs of individual cultures' (62). The claim is that Pirahã, for example, not only lacks recursion, but also lacks any hierarchical grammar. It can be described as one that is 'little more than words arranged like beads on a string' (105). As was mentioned at the beginning of this review, the set of claims related to the no protolanguage and no hierarchical grammar proposals appears to represent a stronger hypothesis from that of previous work, tied in turn to a now much broader working definition of 'language':

- stage G2 – words and phrases form constituents, but no recursion,
- stage G3 – constituents in hierarchical structure AND recursion.

Chapter 9 cites the work of Fred Karlsson that suggests the grammars of 'Standard Average European' languages are not recursive.

Specifically, Figure 1 (84) marks the division for modern language at stage G1, linear order without additional structure, avoiding not only recursion but also tree-structures (220). Emphasizing that their systems were not protolanguage, the advance of *H. erectus* and *H. neanderthalensis*, even in the absence of phonology, to G1 (minimum for modern language) consisted in the use of symbols plus linear order (225). As word order is 'culturally specified', speech communities that adhere to cultural constraints such as the Immediacy of Experience Principle (IEP), as in the case of the Pirahã, will tend to (socially) construct a G1 language system. For example, the cultural parameter (check, so to speak) of the IEP inhibits the application of recursion because declarative utterances contain only assertions directly related to the moment of speech (Everett 2009).

So far, the most informative exchange on whether or not in the existing corpus of Pirahã examples of embedding can be identified is Nevins, Pesetsky &

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Rodrigues (2009) and Everett (2009), an interesting and important confrontation of analyses that will eventually be settled. In *HLB*, Everett gives an example in English of the kinds of problem in assigning patterns of word order and constituent to Pirahã sentences: in *John said that the woman likes sugar*, should *that* be taken as subordinating conjunction or pronoun, each with their respective intonation (223)? Most importantly, the claims and counterclaims by the authors are presented in such manner as to be able, one day, to adjudicate them definitively. But as concerns the claims of the book and earlier related studies, that cultural knowledge can bar or rule out all recursion in the grammar (also see Everett 2015), it has been pointed out that the best test of this hypothesis lies in the assessment, in their performance, of speakers' actual knowledge of language. The inevitable, and presently growing, bilingualism of the speech community will provide important evidence on whether or not the cultural expectations of the IEP will block embedding in mixed Pirahã-Portuguese discourse (e.g. in codeswitching) and in second language (L2) learning. Will intermediate Portuguese L2 interlanguage competence (in the presence of preserved Pirahã L1 competence and an intact IEP) see embedding blocked? It would, according to the hypothesis, be barred or ruled out even in advanced L2 Portuguese proficiency (balanced bilingualism for community residents where the IEP is conserved as cultural norm). Sakel (2011) has conducted the first exploratory studies in the domain of bilingual ability with beginning level adult L2 learners. It's a matter of time before the decisive evaluations will be able to be conducted, for example, starting with child and adult learners' ability to comprehend sentences that contain embedded constituents. In parallel, an alternative approach to the debate about what languages like Pirahã (i.e. the mental grammar of the speakers) might 'lack' could be a more bottom up series of assessments: how do bound and free morphemes, words, and phrases combine? Do these combinations form constituents? What constraints, then, apply to their possible combination?

The proposal for G1 grammar as native L1 language competence (or dominant language in unbalanced bilingualism), NOT L2 LEARNER LANGUAGE OR PIDGIN, now adds a new dimension to the discussion. Under this proposal, some of the considerations just mentioned would no longer apply.

To conclude are two recommendations for editing a second edition:

- Substitute 'subhuman' (appearing three times: Chapters 3, 8 and 9) when characterizing opposing views on protolanguage and related questions, with a more neutral term. The implied association comes to be tendentious. For example, Hauser and Chomsky do not themselves refer to this idea.
- The portrayals of Merge, basic operation in the Minimalist Program having the property of recursion, are either unfairly biased or are not accurate.

The reason for why in this discussion I've become sensitive to choice of words stems from the record of the controversy about Pirahã. As a non-linguist, looking in, what has perplexed me over the years about Everett's arguments is the

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virulence with which they have been received. On two previous occasions I have publically asked that charges of the most serious nature, impugning the integrity of his work (that by all appearance, now, were made irresponsibly), be clarified and substantiated – if they cannot be, then be publically retracted. I am now asking for a third time:

(1)   http://jan.ucc.nau.edu/nf4/EverettChomskyPosting.pdf
(2)   http://jan.ucc.nau.edu/nf4/CHE(2012)post.pdf

Why this matters, professional ethics aside, is related to the opportunity that especially this debate, in my view unlike ever before, offers the fields of cognitive science: the real possibility of actually settling the long-standing problem about domain-specificity in language ability. To his credit, Everett himself (in Chapters 4–7 and 10, in particular with references to the idea of modularity) points this out.

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