

Beyond the Pirahã Controversy - A Review of Dan Everett's *Language the Cultural Tool*.

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Dan Everett's latest book has generated much controversy even before hitting the bookstores. Several reviews in the popular press portrayed it as another salvo in a battle against Noam Chomsky's influential views. Unsurprisingly, Chomsky flat-out dismissed Everett's findings: "It can't be true." (Chomsky, cited in New Scientist, 2012). Others were even more dismissive. One stated: "the world does not need another article about Dan Everett" (Nevins, cited by Bartlett, 2012). Another was downright insulting: "it appears that theorists of [Everett's] ilk wish to abandon all logic for mysticism" (Ashraf, 2012), and another alleged that Everett's research "does not meet the standards of scientific evidence in our field" (Rodrigues, cited by Schuessler, 2012). Given that all these comments were made without reading the book, one has to wonder what "the standards of the field" are.

Anyone expecting that *Language the Cultural Tool* contains either surprising novel arguments against, or in depth discussion of, Chomsky's work will likely be disappointed. But the lack of focus on Chomsky is a virtue, not a shortcoming. Experts from various fields have provided detailed criticisms of the Chomskyan paradigm. Developmental psychologists have questioned the cogency of poverty of stimulus arguments (e.g. Tomasello, 2003; MacWhinney, 2005), field linguists have demonstrated that not all human languages share Chomskyan language universals (e.g. Evans & Levinson, 2009), syntacticians have shown inadequacies in data interpretation (e.g., Postal, 2004; Jackendoff 2011), experts on social cognition have shown how language structure is shaped by language use (e.g., Enfield & Levinson, 2006; Tomasello, 2008) computational modelers have simulated aspects of language acquisition previously claimed 'unlearnable' (e.g. Christiansen & Chater, 1999; MacWhinney, 2010), and evolutionary theorists have provided convincing arguments against Chomskyan UG (e.g. Arbib, 2005; Jackendoff & Pinker, 2005; Tomasello, 2008; Hurford, 2011; Lieberman, 2013).

Chomsky himself confessed that his linguistics rests on a metaphysical foundation that forces us to “accept things that we know don’t make any sense” (Chomsky, 2012, p. 91), that his work has not produced any independently confirmed results (ibid, p. 76), that we do not know how Universal Grammar develops into a specific language because “[i]t’s hopelessly complicated” (ibid., p. 54), and that, essentially, we cannot know how language evolved because even the evolution of bee communication is “too hard to study” (ibid., p. 105).

Given this situation it would not be a valuable contribution to re-iterate well-known criticisms of a ‘research program’ seemingly now questioned even by its main proponent. Justifiably then Everett spends only a few pages on Chomsky’s views and focuses his main attention on empirical findings about Pirahã and several other languages. He proposes a theory that can account for these findings and draws on research in anthropology, primatology, developmental psychology, and computational modeling to defend his proposal. This detailed proposal, the main focus of *Language the Cultural Tool*, makes the book worth reading and discussing. Such discussion can, of course, include criticism. But, as another reviewer put it, the book “deserves a serious reading, and a response beyond name-calling” (The Economist).

Before discussing content, it needs to be stressed that *Language the Cultural Tool* is not a scientific treatise but aimed at a general audience with little or no background-knowledge in formal linguistics. Therefore, one should not fault the volume that it fails to present cutting edge work of the quality expected in scientific journals. Unsurprisingly, important technical details are omitted, and some of the seemingly irrelevant anecdotes and personal stories that increase ‘readability’ make it at times difficult to follow the line of argument. However, the wealth of fascinating information about cultural and linguistic particularities that must appear quite foreign to many European and North American readers more than make up for this deficit. Anyone who approaches *Language the Cultural Tool* with an open mind will be rewarded because even readers who eventually disagree with Everett’s main proposal will learn much along the way and, hopefully, agree with one of Everett’s main messages: All human languages are equally important because every language is “a repository of the riches of a highly specialized cultural experience...providing us with different ways of thinking about life” (p. 303).

What then is the proposal that has caused such hostile reaction from some critics? Unlike Chomskyan linguists Everett does not believe that language is a

genetically fixed biological organ that evolved to allow humans to express recursively a potentially infinite array of thoughts. And, while this disagreement has received virtually no media attention, Everett also rejects the proposal of some linguists that languages are abstract objects that exist independently of human brains. For him “language is an instrument for solving the general problem of communication in conformity with the values and the rankings between values of special cultural groups” (p. 301).

One of the main reasons leading Everett to this conclusion was his detailed study of the language of the Pirahãs, a small tribe living isolated from western civilization in the Amazonian jungle. Their language has often been described as exotic because it differs in surprising ways from many known languages and reminds us that “diversity rather than similarity [is] the hallmark of human language” (p. 85).

After decades of research, Everett concluded that Pirahã has no words for colors or numbers, no recursive sentences, and that it is not only spoken but also hummed (to disguise the speakers identity or communicate with infants), yelled (to communicate ‘long-distance’), sung (to communicate new information or communicate with spirits), and whistled (only used by males to communicate while hunting, p. 271). Everett explains convincingly how the different modes of “speech” fit different communicative functions. The lack of numbers, color terms, and recursion is explained invoking “an ‘immediacy of experience principle’, which values talk of concrete, immediate experience over abstract, unwitnessed and hence non-immediate topics” (p. 262). Importantly, Everett does not claim that Pirahãs are incapable of perceiving color differences or expressing recursive thought. But, given the demands of their culture, they have shaped a specific language tool that ‘works’ in a way that is fundamentally different from many other known languages.

Pirahã uses a complex system of suffixes that indicate whether the speaker has experienced directly what he talks about, knows it from someone who experienced it directly, or inferred it from one of these sources. These evidential suffixes (attached to verbs) are always required, and this makes it impossible to have noun phrases within noun phrases or verb phrases within verb phrases in Pirahã “because the embedded phrases are not part of the main event described by the main verb and therefore would not be certified by the evidential marker on the verb” (p. 290). Hence a sentence analogous to “David claimed that Robert had told him that Paul disagreed with the thesis of the recursion paper Geoff had commented on two weeks ago.” is not possible in Pirahã. When the

Pirahãs need to express such longer chains of thoughts within thoughts they have to tell a story that is comprised of several non-recursive sentences. Because their language lacks sentential recursion, they use discursive recursion to engage in recursive reasoning. This means that not all sentences of English are translatable into Pirahã. But if Everett's tool hypothesis is correct we should expect this because language is a tool created by the members of one community, shaped by their specific cultural needs. For isolated tribes translatability into exotic languages like English has no practical value.

The tool approach can account for the great differences between human languages because the cultural needs of different groups vary widely. But languages are also similar on a fundamental level. The strong Chomskyan claim that *all* human languages share certain core properties remains unconfirmed. But his discovery that, in spite of superficial differences, *many* languages share important structural properties is based on fact. It convinced many linguists and psychologists that a genetically fixed language organ can account for those similarities. So far Chomskyans have not provided any detailed proposals about how language is encoded in the genome. But if such encoding is possible, it could account for similarities found between human languages. Can the language tool hypothesis account for such similarities as well? Everett claims it can. He argues that any language has to meet certain criteria to be useable as a communication tool. Some of these conditions are set by our biology (the sounds we can make and distinguish, the length of utterances we can comprehend, etc.). But more importantly, a tool's function determines whether it can be useful: "all languages must solve the same problems, whether communication or expression of thoughts... The forms of languages... are partially determined by their functions, via properties of the brain that have nothing to do with language" (p. 87). This means languages are similar because humans have to solve similar problems and our brains limit the possible ways to solve these problems.

The proposal that language is a cultural innovation designed to accommodate communication is not new. It was discussed by the protagonists of Plato's *Cratylus*, and more recently, Lev Vitgotsky reintroduced it. Critics have focused on two challenges. First, they argue that language cannot be a tool for communication because it is so poorly designed for this purpose. Not only is it possible to imagine tools that would be much better suited for the communication purpose but, like the notorious Ford Pinto, language has features that can put communicators at serious risk. For example, ambiguity and

vagueness often prevent an intended message from being conveyed. In extreme cases such unintentional miscommunication can lead to dire consequences (divorce, litigation, or war).

Everett addresses this problem by arguing that it had to be expected that a tool shaped by culture *and* natural selection would not be ‘perfectly designed’ but merely good enough to do the job better than any other available tool. It also would be a mistake to expect that all the information that needs to be communicated has to be located ‘in’ language. Often context disambiguates sentences and a more ‘precise’ language would redundantly encode information the listener already extracted from context. Furthermore, he suggests that it can be often advantageous if language is vague or ambiguous because we do not always want our conversation partner to know exactly what we’re up to.

A second group of critics grants that the tool approach is plausible for a language like Pirahã because there seems to be a very good fit between what the tool needs to do and what the tool is capable of doing. But when we look at a language like English it seems there are many ‘features’ that are never or only extremely rarely needed by the vast majority of speakers. This is a situation comparable to buying a Porsche if one needs a car exclusively to get to work and lives in an area that has a 30km/h speed limit. Sure the Porsche will get one there but it is such an overkill that prudence would dictate trading it for a less exotic car. When we apply David Gil’s question [‘how much grammar does it take to sail a boat’] to modern industrialized societies, we can easily see that it would take a lot less grammar to communicate all needs that possibly could arise. And even if it is sometimes advantageous to be vague or ambiguous, critics are correct to caution that not infrequently the *intended* meaning is not conveyed because speakers select not the best from a seemingly unlimited plethora of possibilities to express their thoughts. We should expect frequent attempts to restrict languages ‘artificially’ to make them better communication tools. But only few such attempts have been made. They mostly failed and we continue to miscommunicate frequently. Finally, important points of the Katzean criticism of Chomskyan linguistics (e.g. Katz, 1981;1996; Katz & Postal, 1991) would apply to Everett’s proposal as well: if language has the kind of unlimited recursion Everett seems to accept for most languages, then the vast majority of the sentences of any language would never be uttered hence never be ‘needed’. Why then *do* most languages have unrestricted recursion? It would have been desirable to engage with at least some of the challenges that are not based on Chomsky’s view and show why the tool hypothesis can meet those challenges.

Finally, a point about translatability is in order. When explaining that Pirahã has no special terms for phatic communication (such as ‘hello’ or ‘good-bye’) but co-opts normal speech expressions, Everett provides an example: “...when men leave to hunt or fish, women will yell out to them ... to bring the large monkey they saw *three* days ago when they were gathering brazil nuts” (p. 238, my emphasis). Attentive readers will notice that this seems to contradict the claim that Pirahã has no words for numbers. However, these readers need to keep in mind that *Language the Cultural Tool* is not a scientific treatise that provides detailed lists of exact translations. Instead, it is a book that introduces scientific work to a general audience, and *this* is at times done most effectively by using an approximate translation into what the reader would have said in a comparable situation. The more literal translation (“a few/several days ago”) is not needed here and Everett opted for one that a potential reader likely would have used.

More generally this example illustrates a challenge linguistic field workers encounter on a daily basis. They need to resist the temptation to translate other languages into what a native speaker of English would say but need to find a way to express in English what the speaker of another language has said. This very challenging task may not be fully appreciated by non-linguists. Other challenges arise when the native speakers are too eager to please the field worker. Everett learned quickly that he could not ask the Pirahãs if a sentence of their language was grammatical. But he figured that asking them if sentences are ‘pretty’ would produce reliable information about acceptable sentences. This was not unproblematic as this anecdote illustrates: “One of my most helpful language teachers insisted that I could say a certain sentence and that when I said it, it was indeed ‘pretty’. However, I asked him to say it himself... [and] he replied ‘I cannot.’ Why not?” I asked. ‘Pirahã do not talk like that’ was the puzzling reply. ‘But you said I could say it!’ ‘Yes’, he said ‘you can say anything you like. You are paying me’” (pp. 93-4). Needless to say, Everett had to revise his questioning strategy once again. Hopefully, books like *Language the Cultural Tool* will contribute to a better understanding of the tremendous difficulties and the amazing accomplishments of linguistic fieldwork.

Last not least, even though the linguistic work on Pirahã is an important focus of *Language the Cultural Tool*, it would be misleading to imply it is the only interesting part of the book. Everett covers a wide range of language related cultural topics, ranging from Greek mythology to a detailed discussion of differences in the current Hawaiian, Iroquoian, and Pirahã kinship systems. He

compares human cognition to the cognitive abilities of other species and discusses similarities and important differences. This survey leads him to reject the Cartesian divide between human and non-human intelligence. Additionally he discusses evolutionary, anatomical, genetic, and neurophysiological evidence that leads him to accept the Cartesian proposal that intelligence is a general-purpose instrument that underwrites all human cognitive abilities including language and to reject Chomsky's domain specific language faculty. This broad scope makes the volume an important contribution to the current debates in linguistics and cognitive science. Obviously, no 330-page volume aimed at the general reader can cover all or even the most important findings in the areas discussed by Everett. Hence, this work should not be considered in isolation but as 'springboard' into a fascinating body of literature, covering the same topics in more depth and arriving at times at different conclusions. But it should be clear from reading *Language the Cultural Tool* alone, that anyone who wishes to defend the Chomskyan paradigm needs to do much more than challenging the legitimacy of the findings on Pirahã.

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