Review of: "Historical evolution of culture, mind, and language. Considerations basing on Everett´s study upon the Pirahã"

Hartmut Traunmüller[1]

1 Stockholm University

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This is an interesting analysis of some outstanding features of Pirahã culture and language from a point of view of cross-cultural and developmental psychology in the spirit of Piaget. It goes against attitudes and assumptions that belong to what Lakatos would have considered the hard core of the contemporary research programme in anthropology. Research that does this runs a high risk of being rejected if not immediately by the editors of trusted and reputable journals then by referees. Together with the similarly tradition- and convention-burdened attitude by teachers and grant providers, this blocks fundamental progress in science. In distinction from several other reviewers of this article, I regard it as most commendable that valuable articles that go against generally accepted assumptions within a field of research have a chance in Qeios.

Based on developmental psychology, the author provides a convincing explanation for Everett's reported experience that adult Pirahãs, as distinct from their children, fail to acquire the skill of counting even if they try hard. They have been brought up in a non-counting culture, and the human mind appears to be open for learning to count only during childhood. Unused developmental windows cause arrested developments.

Once it is clear that Pirahãs have no concept of number, it goes without saying that they do not distinguish between singular and plural. However, the author mentions the absence of a plural separately and considers it erroneously as typical of less advanced languages. Just consider that there is no general plural in East Asian languages (Chinese, Korean, Japanese, Vietnamese, Thai). The presence of an obligatory plural is typical of antiquated, over-grammaticalized languages. Most European languages force their speakers to express number for all countables (plural vs. non-plural in French and, more widespread, singular vs. non-singular), some also in adjectives and verbs. Obligatory distinctions in gender, even in arbitrary grammatical gender, are even more inutile. Such obligatory distinctions are minimal in creole languages. Over history, languages tend to become as complicated as its speakers can handle. Simplification pressure comes from second language speakers. This is why the structure of creole languages is particularly simple and utile, and why Malay/Indonesian, Mandarin Chinese, and English have become simplified. Pirahã is neither particularly simple and regular, nor is it over-complicated.

Page 2-5, 7, 17, 30, 32, 37: The author claims repeatedly that certain unspecified "categorical color terms" are absent in Pirahã. However, there are no universal color categories, and the way in which Pirahãs speak about color is familiar in

particular from precolonial African languages that basically use words for black, white and red with the associated meanings of 'dark', 'light' and 'blood' respectively. (The English word "red" has also been traced back to an Indo-European word for 'blood'.) It would have been more interesting to learn whether the Pirahãs have a word for 'color'. If they have none, they may really lack this concept, but this has not been made clear.

Quotation from page 4: "*Pirahã culture constrains communication to non-abstract subjects which fall within the immediate experience of interlocutors. This constraint explains a number of very surprising features of Pirahã grammar and culture: the absence of numbers of any kind or a concept of counting and of any terms for quantification, the absence of color terms, the absence of embedding, the simplest pronoun inventory known, the absence of "relative tenses", the simplest kinship system yet documented, the absence of creation myths and fiction, the absence of any individual or collective memory of more than two generations past, the absence of drawing or other art and one of the simplest material cultures documented, and the fact that the Pirahãs are monolingual after more than 200 years of regular contact with Brazilians and the Tupi-Guarani-speaking Kawahiv." (Everett 2005a, p. 621)*"

Here, it is reasonable that the immediate experience constraint leads to a simple kinship system, the absence of creation myths, fiction, and a memory of more than two generations past. However, it remains unclear how the same constraint would lead to an absence of number, of color terms, of embedding and of "relative tenses". Further, the claim that Pirahã has "the simplest pronoun inventory known" is not at all tenable. Delete this. The pronoun system (not described in this article) is actually free from unnecessary complications, but this holds for the most widely used pronoun system, that of Chinese, as well. It is rather interesting that according to one description, Pirahã has even a specific pronoun for animals under water and another one for non-aquatic animals.

Page 4, 6, 21: While distinctions in tense and aspect of verbs, such as future II, perfect, past perfect, and conditional I and II (page 21) may not be grammaticalized in Pirahã, the author fails to consider that other utile distinctions are. Consider the quote from Everett: "*No one should draw the conclusion from this paper that the Pirahã language is in any way ´primitive´. It has the most complex verbal morphology I am aware of and a strikingly complex prosodic system.*" (page 6).

The author does not mention this, but it is primarily evidentiality that is grammaticalized in Pirahã. This lends prominence to statements about self-perceived events. It can be noted that to these belong even one's dreams. On the other extreme, it lends obscurity to myths and fiction. It also lends obscurity to religion, but not to ghosts which can be heard. Here, it appears that the Sapir-Whorf hypothesis of linguistic relativity would offer a reasonable explanation for Pirahã attitudes.

Pages 31, 33, 34: The author should be excused for the unusual expression "nature peoples". This appears to be a translation of German "Naturvölker", which has a positive connotation and lacks a good equivalent in English. English "primitive peoples" refers to the same peoples, but with a negative connotation. "Indigenous peoples" reflects a colonialist view.

Qoutation from page 34: "*The first words which a child learns are words for the basic categories and not those for superordinate categories. He or she will learn cat and dog before learning animal … (Hill & Arbib 1984, p. 285)*".

This is a false teaching. This was demonstrated to me by my daughter, who, before she had any words, used a grunt first

when referring to a pig, then to a dog and a month or so later, with a questioning expression, to a tiny red dot that was moving. It was a kind of spider.

Qoutation from page 34: "*The Pirahã language however has flexions, up to 16 endings per verb, usually three or five. Therefore, it is thinkable that Pirahã language did not emerge with the onset of Homo sapiens but was preceded by some more elementary languages. This would not exclude the possibility that some main characteristics of the Pirahã language may trace back to either the onset or the early beginning of Homo sapiens.*"

This may be considered as naïve. No language, not even any feature of a language can be traced back more than 10 000 years.

References: Clean the list from literature that is not actually mentioned.

As for Oesterdiekhoff, G. W. (2018b). "Evolution of mind and language. Learning from the Pirahã case",*Anthropos, 113*, 1, 195-216: Tell the readers in the Introduction that the present article is an extended version of this former one. (In response to another reviewer)