

Do Pirahã speak Nean?

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The war of words is a metaphor that should be taken literally in linguistics.

In this essay I am omitting the history of the long war between the formal linguistics of Noam Chomsky and his critics because the linguists know the story and the non-linguists can turn to the well written article in *The New Yorker*: ***The Interpreter*** by John Colapinto. The war remains as unfinished as the Iraq war, but the general state of things is more or less clear: the Gullivers lose to the Lilliputs.

The article in *The New Yorker* is an excellent piece of journalism. It can be complemented by many available on the web professional materials googlable as: **“Dan Everett” Piraha OR Pirahã**. I have no say in a professional linguistic discussion, but my point of view may be of interest for the seekers of new ideas.

John Colapinto actually traveled to the Pirahã tribe in Amazonia together with Dan Everett, a linguist and an unordinary personality, who is an unrivaled speaker of the exotic language of the tribe.

John Colapinto writes (p.130):

When I asked Everett if the Pirahã could say, in their language, "I saw the dog that was down by the river get bitten by a snake," he said, "No. They would have to say, "I saw the dog. The dog was at the beach. A snake bit the dog.”

I recognize in Everett's transposition the language that I called Nean in my web publications:

1. [Pattern Theory and "Poverty of Stimulus" argument in linguistics](#) (PoS)
2. [Tikki Tikki Tembo: The Chemistry of Protolanguage](#) (Tikki)

and others at [complexity](#).

I am a chemist and not a linguist, although I am superficially familiar with the basic structure of several very different languages. My interest in languages is part of a larger program "a chemist's view of the world" pursued on my [website](#).

I see chemistry as one of the two most romantic sciences; linguistics is the other one. There are many parallels between them, which I explore at my site. Thus, chemistry uses an artificial language that compresses the rich three-dimensional world of chemical structures into a strictly linear sequence of symbols, exactly as our language does when we describe an elephant or the global warming. "The language of DNA" is not a metaphor, but a standard term in molecular biology. Mark Baker, an eminent linguist, entitled his book "The Atoms of Language."

Here is just one example, which I never used before. One of the starting assumptions of the entire theory of Noam Chomsky about universal grammar was the ability of children to construct correct sentences never heard or corrected before (the so-called poverty of stimulus argument). An average chemist during his or her life brings to existence large numbers of chemical substances that never existed before, probably, even in the entire solar system. Each gets a unique name that serves as a photo ID: you can draw the molecule from the name and materialize it in the lab, if you wish.

I am a father of several dozens of never before known substances, but there is nothing to be proud of: anybody can do that. Does it mean that I have some innate knowledge of chemistry? Of course not. Chemistry had even denied a possibility to make some of my molecular children before I actually did it.

I and the rather happy looking and attractive Pirahã Indians, whose photos can be seen in *The New Yorker* and on the web—we all have an innate ability to understand the world and acquire skills and knowledge. If the adult Pirahã cannot learn counting, it means that they either do not need it or the teacher cannot find the right key. If I am not mistaken, some of our very distinguished citizens could not master the Internet, either. Inability to learn the new lessons of history is even more common, and for the same reasons that Dan Everett attributes to the Pirahã: “This is new stuff and they don’t do new stuff.”

Most normal people in this hemisphere are not only incapable of learning chemistry but consider it the most incomprehensible and even repulsive area of knowledge. There are plenty of other occupations, for example, making and counting money. Some of our top national leaders occasionally fail even at their supposedly innate language skills, instead relying on somber language of power—a language much more poor, color-blind, and primitive than even the language of the Pirahã.

But what is Nean? In short, it is speaking in triplets or even in doublets. “I see dog. Dog was beach. Snake bite dog.” This is a good example of Nean grammar. It does not sound good, but all first contacts between different tribes and nations started with learning a pidgin version of the other language. The study of pidgins is a separate branch of linguistics. The fact of great importance is that we understand “I see dog” and “Dog was beach,” especially, in context. It is probably obvious to any Amazonian that snakes are common on beaches. He can explain to the crooked head: “Snake was beach” or simply “snake beach! snake beach!” “There are many snakes at the beach” sounds like “snake snake beach! snake beach snake snake!”

Nean, in my view, is not exactly a language, but the primeval natural grammar. That was my first thesis of an outsider when I got interested in the origin of language some years ago.

I suggested in *PoS* and *Tikki* that Nean is a grammar of such simplicity that it could originate spontaneously by self-organization. This follows from my perception of

complex systems: any natural complex evolving system, such as life, society, culture, technology, etc., starts spontaneously as a system of minimal complexity. Then it grows, evolves, beefs up its complexity, and diverges. Only very simple things in very simple systems can happen without the input from a deity, human, or alien. A group of monkeys cannot type *Hamlet*, but they can certainly type by accident the name of Hamlet. Names like Bush and Gore are even more—and equally—probable to pop up in such experiments. No political allusion intended.

NOTE: At a closer look, to type “Bush” may require less physical energy than to type “Gore.” “Gore” takes longer jumps from key to key. But this is arguable. What matters is the approach to language as to a natural process. What takes less energy is more probable.

On the contrary, if a system is created by human mind from some existing material, it may not need simplicity. Bureaucratic systems are the best example. It has been noticed that our appliances are getting more complex and less reliable. The natural history of bureaucracy as pattern, however, also had to start with something very simple, such as just counting or policing. Moreover, counting also had to start with counting to two, further proceeding to three, five, and ten or twelve.

In order to advance in mathematics further, you need a mathematician. The same with language: you need a speaker and a writer. But you need Demosthenes or Cicero only in a developed society. They are not expected to be good hunters in the jungle.

My second thesis was that the system consisting of the speakers and the social environment maintains the state of homeostasis, which, probably, is the case with the Pirahã tribe. There is no natural language separate from nature. Language is the device for maintaining the homeostasis of the tribe. If it evolves, it is because the homeostasis has been disturbed. If not, people can manage with what they have.

My third thesis regarding language was that we have two very different kinds of languages. One (Language1 or hypolanguage) is the language spoken today in a much

more advanced form only by some uneducated and illiterate, but otherwise completely normal, gentle, skilled, and caring people, albeit with limited experience, which we can find only in particular areas and social strata of the world, even in quite civilized countries. It is also the language of children before some age and level of schooling. It is also the language of new immigrants who are not as articulate as Noam Chomsky, but their children may become one. It consists of short segments of speech, often repetitive and overlapping. It is practically free of embedding and recursion. It is simple because it is difficult. For the same reason *Hamlet* is more difficult than “Hamlet” and “Hamlet” is more difficult than “Gore.” But the cardinal fact is that we understand Language 1 and people can successfully communicate in it, up to a point.

The second language (Language 2 or hyperlanguage), that of long composite phrases with many subordinate clauses, is the result of advanced evolution. It is a bulky human artifice, like HMS Queen Mary II. It was gradually created, by trial, error, and mutation, in order to represent the growing complexity of civilization, including complex ideas and constantly shifting homeostasis. It is the language of science, literature, and bureaucracy. It has nothing to do with the origin and essence of the language that all humanity speaks, but everything to do with culture, society, economics, and maybe a desire to show off. On the negative side, it is also the truly barbaric language of the fine print and the US Tax Code—the language so alien, that we pay big money to professional translators.

With all the fuss around the Pirahã, I feel a need to find some new non-professional arguments, just to convince myself.

All Soviet college students in my time were mobilized to spend at least a month doing some agricultural work—a kind of forced labor. While doing time in the Russian countryside, I witnessed the aboriginal Russian and Ukrainian language, which used probably one percent of the grammatical resources (and sometimes 200% of the foul vocabulary for the male speakers). It was not a local dialect or slang, but the natural speech of some people of mostly older generation, sometimes almost illiterate, and born before the introduction of the comprehensive system of education that the Communists had among their undeniable achievements.

I of course do not have any examples. I remember, however, that in spite of its simplicity, the language was by no means handicapped. It was very expressive, for which there are incredibly rich lexical and morphological resources in both Russian and Ukrainian. It was in homeostasis with environment. It served its purpose and function. I understood the speakers and they understood me.

Stimulated by the story of Pirahã, I decided to look at the records of Russian folklore that could open an audio channel to the past..

There is a Russian site dedicated to Russian literature and folklore: <http://feb-web.ru/>

Here is an example of folk poetry collected in Russia in the middle of the eighteenth century by Kirsha Danilov (in my translation).

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| <p>"Гой еси вы, князи и бояра И могучие богатыри! Все вы в Киеве переженены, Только я, Владимир-князь, холост хожу, А и холост я хожу, неженат гуляю, А кто мне-ка знает сопротивницу, Сопротивницу знает, красну девицу: Как бы та была девица станом статна, Станом бы статна и умом свершна, Ее белое лицо как бы белой снег, И ягодицы как бы маков цвет, А и черныя брови как соболи, А и ясныя очи как бы у сокола".</p> | <p>Hey, you, princes and boyars, And mighty heroes! You are all married in Kiev, Only I, prince Valdimir, remain single, I remain single, walk unwedded, And who knows a mate for me, Knows a mate, a handsome girl: Be that girl slander of figure, Slender of figure, clever in the head, Her white face like white snow, The cheeks like the scarlet poppy, Black brows like sables, And the lucent eyes like the falcon's.</p> |
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The only possessive pronoun is highlighted. Otherwise, there are no obvious grammatical connections between the lines. There is no embedding. The short segments are brought together by the repetitions that look like the “pre-existing condition” of haplology, which I discuss in [Tikki](#):

The lines look ready for haplology contraction:

And who knows a mate for me, Knows a mate, a handsome girl: Be the girl slender of figure, Slender of figure, clever in the head, Her white face like white snow.

They can contract into the single phrase:

And who knows a handsome girl with a slender figure, clever head, and a snow white face, who could be a mate for me?

The folklore is not what we can call natural speech. It is a one-way communication and a product of long evolution, polished by centuries. It can be seen as an intermediate step between Language 1 and Language 2.

Here is another example:

"А и ласково сонцо, ты Владимир-князь!
Не нада мне твоя золота казна,
Не нада три ста жеребцов
И не нада могучия богатыри,
А и только пожалуй одново мне молодца,
Как бы молода Екима Ивановича,
Которой служит Алешки Поповичу".

You are indeed a gentle sun, prince Vladimir!
I don't need your golden treasure,
I don't need three hundred stallions,
I don't need mighty heroes,
Only give me one lad,

Like the young Ekim Ivanovich
Who works for Alesha Popovich.

In the samples of old Russian poetry, the word **которой** (**kotoroy**) is the subject pronoun **who** with a male gender ending. It can be found in the collection of Kirsha Danilov, **but it is rare**: 18 per 8000 words (0.002). In an at random selected segment of Leo Tolstoy's *Childhood*, the frequency of **kotor-** plus case and gender ending is 27 per 2512 words (0.01). Tolstoy, however, uses all other available subject pronouns and high level of recursion (still negligible as compared with the American Tax Code).

The two last lines of the above example could be put differently, in the tradition of "pre-haplology:"

Как бы молода **Екима Ивановича**,
Еким Ивановича при Алешке
Поповиче."

Like the young **Ekim Ivanovich**,
Ekim Ivanovich with/at Alesha Popovich.

Apparently, there was a lost in time person who applied haplology and invented the pronoun out of **something available for another purpose**.

My point is that the Nean grammar, in all its natural primitiveness, opens a way to further **gradual evolution** toward modern recursive language, which we, however, try to avoid in everyday communication. The dense recursivity is intended for the written language, which does not impose a heavy burden on memory. The written text keeps a large chunk of narrative fully in view.

Regarding Pirahã, the controversy comes not from its peculiarity but from the theory that was built initially on Language 2 but tried on Language 1 or 1.5.

I believe that the painful Frankensteinian story of formal linguistics, re-tailored, re-cut, and re-patched many times over (but so beneficial for scores of graduate and postgraduate students of humanities all over the world), would come to an end long ago if Noam Chomsky started with simple languages of pre-literate people instead of the non-existing infinite productivity of grammar under the pens of sophisticated writers. It looks like John Colapinto also noted that.

My prediction is that with more time the Pirahã, the immigrants from our past, who suspect the outside traders of cheating, will find a way to control their trade, probably, by letting their children learn math and Portuguese. In the immigrant families it is the children who serve as an interface between the old folks and new reality.

Until then, it is just a tribe whose homeostasis has been miraculously preserved, as Dan Everett's remark in his [main paper](#) testifies: "The Pirahã are some of the brightest, pleasantest, most fun-loving people that I know."

If Russian is a language, so is Pirahã. But probably not for the reasons of the formal linguistics.

As for the formal linguistics, a similar story happened with chemistry: it was prevented for a long time from the true understanding of nature by the dogmatic theory of phlogiston, the hypothetical substance of flammability with zero or negative weight: sulfur burns and disappears because it consists of phlogiston. During the entire eighteenth

century large number of contradicting treatises had been written in order to make some sense of the theory—quite like with universal grammar—before Antoin Lavoisier knocked it off like a dead cockroach. He then lost his head in the French Revolution, but this is a different story.

Quite unexpectedly, the Pirahã story has made me appreciate the historic significance of Noam Chomsky as a public figure on the world scale. He has been keeping linguistics in the focus of public curiosity and attention. As result, the very linguistic trade today is alive, growing, and hot. Naturally, mosquitoes from the young swarm have come to bother the master and grow through the ranks on his blood. Similarly, as a stinging gadfly himself, he has been driving the pachydermous American foreign policy into the focus of world attention, although the animal was quite capable to stay there on its own. Whether he is right or wrong is of secondary importance as compared with the importance of his dogged search for truth. Can a really intelligent person be **completely** wrong?

John Colapinto got his story right. In politics follow the money, in private life *cherchez la femme*, and in linguistics listen to the horse's mouth.

SELECTED REFERENCES:

Dan Everett's main paper: <http://www.stanford.edu/class/symbols100/everett.pdf>
or <http://ldc.upenn.edu/myl/llog/EverettPiraha.pdf>

The detailed paper of Andrew Nevins, David Pesetsky, and Cilene Rodrigues, which criticizes the conclusions of Dan Everett, can be accessed through <http://ling.auf.net/lingBuzz/000411> (click on the title) or directly downloaded through <http://ling.auf.net/lingbuzz/@uESGsWZHRsRjdIx>

A sample of Piraha text: www.llc.ilstu.edu/dlevere/docs/panther.pdf

Peter Gordon's article in *Science* is available online through EBSCOhost Research Databases: *Numerical Cognition Without Words: Evidence from Amazonia.*, By: Gordon, Peter, *Science*, 00368075, 10/15/2004, Vol. 306, Issue 5695, pp. 496-499 **Database:** *Academic Search Premier*. Of course, you can drive to a big library, if you have nothing better to do.

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