

“The notion that the essence of what it means to be human is most clearly revealed in those features of human culture that are universal rather than in those that are distinctive to this people or that is a prejudice that we are not obliged to share... It may be in the cultural particularities of people — in their oddities — that some of the most instructive revelations of what it is to be generically human are to be found.” Clifford Geertz (1926-2006)

***CULTURAL CONSTRAINTS ON GRAMMAR IN PIRAHÃ:
A Reply to Nevins, Pesetsky, and Rodrigues (2007)¹***

Daniel L. Everett
Linguistics, Anthropology, and Biological Sciences
Illinois State University
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Abstract: In Everett (2005b) I argued that Pirahã culture constrains its grammar. This paper is a response to a recent critique of Everett (2005b) by Nevins et al. (2007, MS). I address the criticisms raised in Nevins et al. paper and I continue to argue that Pirahã presents problems for the notion of a Universal Grammar. I further argue that the methods traditionally used in the Generative Grammar tradition are flawed and do not meet the scientific standards accepted across different fields in science, thereby making it difficult to assess the validity of the claims made by Nevins et al.

1. Introduction²

Here is a question most linguists do not ask: How much grammar does a language need? For example, we all know that successful communication is underdetermined by language. And language is underdetermined by grammar. Consider well-known examples like the following:

- (1) Visiting relatives can be a nuisance.
- (2) Pharaoh's daughter took a [profIt] from a rush on the bank.
- (3) We had a ball.
- (4) He is not here yet.
- (5) Colorless green ideas sleep furiously.
- (6) Nope. (One man says to another as they sit in a bar eyeing the wallet hanging out of a drunk's pocket and one of them starts to reach for it.)

Each of these shows that language must be supplemented by a culturally appropriate context to be understood, because the grammar alone does not give enough

¹ **An update to this paper will be posted to this website in a few weeks, after additional experimental studies on recursion (Eugenie Stapert, Michael Frank, Ted Gibson, Evelina Fedorenko, and D. Everett) and numbers (Frank, Everett, Fedorenko, and Gibson) are complete, along with links to these papers.**

² For useful comments on this reply, I would like to thank Ted Gibson, Mike Frank, Ev Fedorenko, Jeanette Sakel, Mark Liberman, Geoff Pullum, Steve Sheldon, Tom Headland, Geoff Sampson, and Paul Postal. I especially want to thank Linda Wulfman for her encouragement and advice.

information for a stand-alone interpretation. It can provide a range of interpretations, in the case of ambiguity of different types, or no particular interpretation, in the case of vagueness (as in (5)). Or the communication can only partially rely on language, as in (6).

This raises the question as to just how much grammar is needed in a successful human communication system and the role that grammar and language together play in such a system. Everett (2005b) was a beginning attempt to answer this question. Everett (2005b) situates itself within the deep traditions of American Descriptive Linguistics (not to be confused with Structuralism) of Franz Boas, Edward Sapir, on the one hand, and the philosophical tradition of American Pragmatism, represented by Peirce, James, and Dewey on the other. This is taken up more in the final section of this paper, where I argue that the Pirahã facts support a 'Pragmatist Linguistics' and continue to present severe problems for Chomskyan or other theories committed to a Universal Grammar.

Now, Nevins, Pesetsky, and Rodrigues (2007), henceforth NPR, have written a long rebuttal to that attempt. They are concerned about nearly every point that I made in Everett (2005b), but seem particularly exercised by my claim that there is no evidence in Pirahã for recursion, a property predicted to be the single most important property of human languages in recent work by Chomsky and others (more on this below). I will clarify more here what I mean by the proposal that Pirahã lacks recursion since it was not as clear as it might have been in Everett (2005b), partially due to the fact that there is no clear, widely accepted definition of recursion in the literature. Everett (2005b) argued further, that the Pirahã data show an architectonic effect of culture on the grammar of Pirahã and this too is not predicted by Chomskyan linguistics. I see nothing in NPR that leads me to reconsider these main points, though I will clarify some details.

There are two reasons why it is unsurprising and appropriate that NPR offer this rebuttal. First, as I have said many times over the years, no research results should be taken at face value. Results, especially from challenging field situations like the work I have engaged in with the Pirahãs for over 28 years – a *monolingual* situation requiring long months of language-learning before detailed or in-depth research can even start (on the monolingual method, see Everett (in preparation a), Everett (2004), and Everett (2001)), need to be examined carefully. Research results must of course bear scrutiny. Second, it is appropriate that these particular authors take up this task, because they are all trained in and deeply committed to a particularly strong set of hypotheses of Generative Grammar. All three of them adopt the well-known Chomskyan position that all languages share a set of core structural constraints variously known as Universal Grammar, the Language Organ (on the latter see Everett (2005a; 2006b) for serious criticisms), etc.

This paper is a response to the criticisms of NPR of the case made in Everett (2005b). I owe NPR a debt of gratitude for allowing me the occasion to further substantiate the claims of Everett (2005b). In this additional argumentation and documentation, I am going to argue that the paper by NPR is wrong on just about every single point – not only about Pirahã but also about how to do linguistics more generally.

This reply is organized as follows. I will first respond to the criticisms of Everett (2005b)'s claim that Pirahã lacks recursion, as well as the discrepancies between that work and my earlier work, Everett (1983/1986). I begin this by examining a later and slightly revised statement of the thesis of Everett (2005b), published as Everett (2006a). In this section, I examine the arguments in the work by NPR against parataxis, looking

carefully at their analysis of nominalization, Wh-questions and movement, indirect speech, and so on. In every case I conclude that NPR's counterproposals are incorrect. I then discuss other components of Everett (2005b) that NPR take issue with (e.g. quantifiers, color words, numerals, etc.). In the final section, I offer a general criticism of Generative Grammar and explain why the Pirahã facts continue to be such a devastating indictment of the Generative theoretical framework. In this section, I also outline an alternative approach to the study of human language that is not based on Universal Grammar. I suggest that other languages like Pirahã no doubt exist, many in fact, but that a Whorfian effect on linguistics research often impedes the discovery of such cases.

I want to make clear from the outset that this reply to NPR is not meant to be either a stand-alone paper or publishable article. It is simply meant to supply some of the reasoning behind Everett (2005b) and answer the criticisms of NPR. Therefore, the reader may need a copy of NPR to follow my arguments. Experimental work is in progress and more detailed studies of Pirahã syntax are underway by the author and by various other researchers who have conducted field research on Pirahã.

It is important to realize there are two sets of claims here and in Everett (2005b): (i) that culture exercises an architectonic effect on grammar; (ii) that the observations by Everett (2005b) on Pirahã's lexical, cultural, and syntactic features are correct. The former could be wrong and the latter correct or vice-versa. They are separate sets of hypothesis.

1. The criticisms

According to NPR they have three principal reasons for writing this paper. First, my work has received a lot of attention from the popular press and they feel that it is incumbent upon them to evaluate the analyses that have attracted so much attention. Second, Pirahã looks to NPR to be 'just a language' like any other and this is, to them and the Generative Enterprise as well, 'just as exciting'. Third, they want to encourage further research on Pirahã. I am also interested in this, so this is also a goal of the present paper. A list of researchers previously and currently engaged in research on Pirahã through my own efforts is given in section 7 below.

On page 6, NPR says that they base their arguments on Everett (1986), rather than Everett (2005b). They say on this page:

"... since we have not yet done independent fieldwork on Pirahã, we cannot independently verify the descriptions offered in this earlier work of Everett's. Nonetheless, we are impressed with its comprehensiveness, perspicacity and consistency. These properties suggest that this earlier work is a reliable guide to basic properties of Pirahã, as well as to those complex properties of the language that it discusses in depth. As we also noted above, in the two decades between the publication of DISS and HAL and the appearance of CA, Everett (1987a) appears to be the only significant additional contribution to the study of Pirahã syntax besides the on-line texts cited above."

Apparently if a work is clear, well-organized, and consistent it is closer to the truth. Of course, these are ingredients of a good thesis and not entirely unreasonable as a guide. NPR finds it 'troubling', they say, to see the discrepancies between Everett (1986) and

Everett (2005b). They thus conclude that Everett (1986) is a more reliable guide to Pirahã than Everett (2005b). Interesting. I would find the opposite troubling, i.e. that a researcher never changed their mind or found errors in their earlier work.

I am going to begin this discussion with a restatement of the Immediacy of Experience Principle (IEP) in Everett (2005b), the revised and fuller statement in Everett (2006a), along with a summary of how this version of the IEP predicts the facts that Everett (2005b) focused on and which NPR attempt to reanalyse.

Immediacy of Experience and its predictions

(1) IMMEDIACY OF EXPERIENCE PRINCIPLE (IEP) IN PIRAHÃ: Declarative Pirahã utterances contain only assertions related directly to the moment of speech, either experienced (i.e. seen, overheard, deduced, etc. – as per the range of Pirahã evidentials, as in Everett (1986, 289)) by the speaker or as witnessed by someone alive during the lifetime of the speaker).

I claim that this *predicts* the following unusual convergence of properties in Pirahã grammar and culture:

NO RECURSION: since embedded sentences are not assertions (Cristofaro (2003)), they cannot be used. To avoid these, the grammar of Pirahã will not have rules of the type in (2) below. This will explain the absence of recursion in Pirahã, where (2) is 'system recursion' and (3) is simple embedding. Avoiding (2) eliminates violations of (1) and renders the grammar simpler, leaving more of interpretation to context. The facts suggest that Pirahã grammar avoids (2). This means, in effect, that Pirahã grammar has no phrase structure. I think that this is right. And it makes predictions, as we see below, such that there will be no more than two possessors in a row.³

- (2) a. A --> BC
- b. B--> DE
- c. C --> AF

³ Mark Liberman (email of March 22, 2007) comments that "... if a language has pronouns or nouns like 'fact' or 'situation' that can refer to the content of another clause (previous or upcoming), then any recursive structure of the form

1. (A (B C))

can be approximated via something like

2. (B C). (A that).

where "that" is interpreted to mean "(B C)".

In connected discourse, the same sort of cross-reference may also be assumed with any explicit referring expression."

Once again, however, my claim is not that the Pirahã cannot think recursively, but that their syntax is not recursive. This is an argument about thinking and interpreting, not about syntax proper.

(3) A --> AB

This explains why Pirahã lacks the following:

(4) Coordination:

- English
- a. [NP John and Bill] came to town yesterday.
 - b. [S [S I saw [NP Mary, Sue, and Willy] [PP in town and at the mall] and [S I saw some other people too]].

cf. Pirahã

- c. *Ko'oi' (hi) hoaga'itaha'. Kohoi (hi pi'o) hoaga'itaha'.*
name (he) came. name (he) (additionally/too) came.
'Ko'oi came. Kohoi came (too).'
- d. **Ko'oi' (hi) Kohoi (hi) (pi'o) hoaga'itaha'.*
name (he) name (he) (additionally/too) came.
'Ko'oi and Kohoi came.'

(5) Disjunction:

- a. Either [NP Bob or Bill] will come.
- b. I had [NP chicken or pork], some white meat.

(6) *Ko'oi' (hi) hoaga'itaha'. Kohoi (hi) hoaga'itaha'. Umm. Ti kosaaga'.⁴*
name (he) came. name (he) came. Hmm. I don't know.
'Either Ko'oi or Kohoi came. I don't know (which).'

(7) Embedding:

- a. I doubt [S whether they will come].
- b. John says [S that Bill thinks [S that Mary will agree [S that Sue should come too]]].

(8) Basic phrase structures:

- a. I came [PP with the Pope].
- b. [NP The big man] got sick.
- c. The [AP very big] man got sick.

(9) Semantic scope requiring embedding:

- a. He didn't say it was raining.
- b. He will not say if he is coming.

NUMBER & NUMERALS: These are skills that have both immediate application and wider application, ranging beyond immediate experience. Since the latter uses would violate the cultural principle in (1), however, these are not available in the grammar. Moreover, since, as Wiese (2003) argues the recursivity of the number system is borrowed from recursion in human languages, the absence of recursion in a human

⁴ In this paper, I will represent low tone on examples by zero marking and high tone by an acute accent following the vowel.

language predicts that that language should also lack a numerical system with counting.

RELATIVE TENSES: These involve assertions defined in terms other than the moment of speech. So when I say in Pirahã 'When you arrive, I will go', as I show in Everett (1993), both 'arriving' and 'going' are defined relative to the moment of speech, (however, one could argue that relative tenses involve recursion and so are for this reason unavailable). More complex tenses would violate (2).

KINSHIP TERMS: The set of Pirahã kinship terms omits words for relations that exceed Pirahã life expectancy (about 40 years). That is, they name relationships that the Pirahã can have with living people, in accordance with the IEP, relations that can be witnessed directly. Also, supporting the lack of recursion in Pirahã grammar, none of their kinship terms are recursive, i.e. defined in terms of other relations (e.g. grandfather, grandson, etc.). The general simplicity of the system apart from the lack of generational depth may or may not follow from the IEP and/or from other cultural principles.

COLOR TERMS AND QUANTIFIERS: Color terms and quantifiers can identify immediate experiences, as can numbers, but, like numbers, are avoided by the grammar because they also entail generalizations ranging beyond immediate experience. See below for more on this.

MYTHS AND FICTION: These violate the evidentiality constraint in (1).

NPR fail to consider carefully many of the facts I called attention to in Everett (2005b) (ignoring entirely for example, the very important points in (4) - (6) above). Nevertheless, I will consider the points that they do address and then discuss these other points.

Problems of translation

As another methodological preliminary, however, let me say something about glossing of examples in Everett (2005b). On page 7 of NPR, the authors say in effect that the more recent glosses of Everett (2005b) are inferior to the glosses of Everett (1986) because they are too detailed (!):

'A few notes about the presentation of data in our paper. Everett in DISS and HAL presents Pirahã examples in the standard manner familiar in linguistics, with dashes and spaces separating morphemes judged to be independent, and with glosses and translations offering a fair approximation of the meaning of Pirahã rendered into Portuguese (DISS) and English (HAL). Similar data as presented in CA has a rather different character. Morpheme division is more extreme, and many glosses appear to reflect etymology rather than current meaning. For example, CA offers the gloss 'cloth arm' where HAL has 'hammock', and insists that the Pirahã rendering of 'all' actually means 'big'. As Wierzbicka (2005) notes in her commentary on CA, "in using such glosses, Everett exoticizes the language rather than identifying its genuinely distinctive features. To say that ti 'ogi means, literally, 'my bigness' (rather than 'we') is like saying that in English to understand means, literally, 'to stand under.' To deny that hi'ogi means 'all' is to make a similar mistake.'"

This quote seems to be based on what Everett (2005b) refers to as the Universal Translation Fallacy, that is, that all languages translate fairly well into one another (and for a much more developed argument against universal translatability, see Grace (1987)).

There are two reasons for the much greater detail in the morpheme glosses of Everett (2005b). First and foremost is the simple fact that I have learned a lot about the morphology that I did not know in (1986). If anything, I would say that the morphological breaks in Everett (2005b) are not detailed enough. As I work more on the language, I expect to make even finer and more accurate breaks. Contra NPR and Wierzbicka (whom I already answered in Everett (2005b) and about which I have more to say below), a more detailed representation of Pirahã morphological structure is not an 'exoticization' of the language. NPR are correct that in some compounds that I have glossed literally, the speakers do not seem to think about the literal meaning of the individual components. But I chose to represent the literal meanings and etymologies for two reasons. First, it is no longer so clear to me that these are not interpreted literally, contra Everett (1986). Second, it is worth informing the reader a bit about the complexity of Pirahã morphology in the context of discussing the simplicity of its syntax. At the same time, the semantic shifts typical of some compounds is *not* a characteristic of the inflectional morphology that I have been able to understand better over the years. (And NPR should be aware of the difference between inflectional and derivational morphology.) Of course, to loosely translate **hi'ogi** as 'all' would indeed make Pirahã sound like languages that NPR are familiar with. But it would be an inaccurate analysis of the phrase because, as I discuss again below, there is *no* word in Pirahã with the meaning of the English word 'all'.

2. Recursion

NPR's discussion (p9ff) of embedding is partially beside the point because they have not bothered to interact with my more recent, published restatement of the effect on recursion of the Immediacy of Experience Principle (IEP) (given in (1) above), from Everett (2006a). Further, NPR claim, erroneously, that I am arguing that Pirahã lacks discrete infinity. No, I am claiming that it lacks recursion. I have no opinion about the former (with regard to the former, NPR say that discrete infinity is responsible for the fact that languages do not make sentences of 4.5 words. But discrete infinity has nothing to do with the absence of '.5 of a word' because there is no such thing as half a word!). One should not rush to condemn NPR for their confusion, however, because the Hauser, Chomsky, and Fitch (2002) article on which they rely provides no clear definition of what is meant by recursion in the first place. In fact there is no definition of recursion widely accepted. Recursion as a property of human languages is problematic at our current level of understanding. For that matter, so is 'discrete infinity'. Both of these notions could be accused of making the incorrect prediction that languages are actually infinite when of course they are not. There is no infinite language, nor could there be one spoken by humans. So recursion and discrete infinity are to a degree just metaphors. This vagueness in claims of recursion is the main reason that I have organized the first-ever conference on Recursion in Human Languages (RECHUL), to be held at Illinois State University on April 27-29 (<http://www.foreignlanguages.ilstu.edu/rechul/>). And as some typologists have noted (Marianne Mithun will be speaking on this as an invited speaker at RECHUL), languages vary tremendously in the degree to which they manifest recursion

in speech. I suspect in fact that in addition to Pirahã, many other languages, e.g. the so-called non-configurational languages that Ken Hale called attention to, could turn out to be better understood as non-recursive languages. I hope that my work will stimulate more research on this important topic.

2.1. Predictions of the no-recursion hypothesis

Now let's consider again the nature of my claim on the absence of recursion in Pirahã and its predictions. The IEP predicts the lack of recursion in Pirahã, as stated under (1) above. This lack of recursion then in turn predicts the lack of multiple possessors, as well as the range of things in (10):

- (10) a. No numerals or counting (since these are built on recursion, as per Wiese (2003)).
- b. No auxiliary verbs (something that Everett (1986) brings out and that I forgot to list as a confirmed prediction in Everett (2005b). Thanks to G.K. Pullum (p.c.) for bringing this to my attention).
- c. No stacked possessors.
- d. No conjunction.
- e. No disjunction.

No stacked possessors in Pirahã and German

How are the multiple possessors predicted? If there is no recursion, then two NPs in a row can occur – one possessor, one possessed – and be interpreted by simple concatenation. But more than one possessor would require a grouping, i.e. Merge, as in *John's father's house*, where 'house' is possessed by 'father', but where two of the NPs must themselves form a unit before addition of the third. These units within a unit cannot be gotten by simple concatenation and so requires Merge (in Chomsky's recent terminology), i.e. recursion. But if there is no recursion, in order to avoid non-assertions in declarative utterances, the function of embedded clauses, then this automatically predicts the absence of possessor stacking, as well as the other facts in (10).

Nevertheless, on p11 NPR offers a standard Generative Grammar argument against my claim that the absence of possessors in Pirahã (a claim tested in January 2007 by Ted Gibson, Mike Frank, and Ev Fedorenko, the results of which are still being analyzed but which so far support Everett (2005b)). Their argumentation and handling of the facts in question are very revealing. They claim that a similar constraint against multiple possessors holds in German. Their counterproposal, however, is weakened by the fact that they get the German facts wrong. More interestingly, the German restriction might in fact be cultural, which would offer further support to the central thesis of Everett (2005b).

The claim by NPR is:⁵

"To pick an example of particular relevance to Pirahã, we can note that English allows prenominal possessive noun phrases to embed other possessives — but

⁵ NPR also say that part of my explanation of the lack of prenominal possessor 'stacking' is that every Pirahã knows every other Pirahã. This is a fact that I believe facilitates the interpretations of such structures, but I do not believe that it explains or predicts the fact. This is what the IEP is proposed to do.

German does not (Krause (2000a, 2000b)); Roeper and Snyder (2005)). As Roeper and Snyder put it: "the English possessive is potentially recursive [(3a)], while the Saxon genitive [its counterpart in German] is not [(3b)]" (compare (4a-b)): "

- (3) a. *John's car (English)*
b. *Hans-ens Auto (German)*
- (4) a. *[John's car's] motor (English)*
b. **[Hans-ens Auto]-s Motor (German)*

Since a German speaker can do the "Mary thinks that... trick" as well as an English speaker can, no one could rationally imagine (even if so inclined) that the unacceptability of recursion in prenominal possessors is due to some global absence of recursion in German. Likewise, we imagine that that it is beyond dispute that the culture of the German-speaking regions of Europe allows for creation myths, artwork, counting and discourse not bound to the "here and now". It thus seems unlikely that one would attribute the absence of recursive prenominal possessors to any pattern of cultural gaps like that claimed by Everett for the Pirahã. Instead, there must be some provision available to human languages (usually called a "parameter") that "turns off" the possibility of recursion within possessive phrases. The switch itself might be fairly abstract in nature.

But as Manfred Krifka points out (email to Everett, 12 March, 2007), this seems incorrect:

*"I don't think that German prenominal possessives are not recursive. We find, for example, many examples of the phrase seines Bruders Hüter on the Web (not only as the title of a German translation of a book of Stanislaus Joyce's book about his brother James Joyce). In addition, we also find examples like Peters Bruders Harley (<http://www.tautoo.de/galerie.html>), Peters Vaters Auto (<http://www.itp-arcados.net/leben/human.faces2000db.html>), Peters Mutters Auto (<http://myblog.de/rene.ueber.alles>). It is true that examples like ??Peters Autos **Motor** is quite bad, but this seems to be due to the fact that prenominal genitives are restricted to names and kinship terms in contemporary German (?des **Lehrers Auto**)."*

So NPR do not appear to get the facts right about German possessors. And if Krifka is on the right track with his conjecture that prenominal possession could be limited to names and kinship terms, then German prenominal possessor restrictions seem at least as likely to be accounted for by a cultural constraint as by a 'parameter'. Therefore, contra NPR, German not only presents no problem at all for my analysis, but it potentially offers additional support for my suggestion that culture affects grammar. Of course, it is *not* my hypothesis, contra the quote above from NPR that the same cultural constraint fits all cultures. That would make little sense.⁶

⁶ Geoff Sampson reports potential cultural differences in English as well on prenominal possessors: "The point about the apostrophe-s genitive being restricted is one of the differences between American and British English which seems not to be well known but which is quite significant in actual usage. I would

Moreover, the NPR answer misses a crucial fact. The German -s possessive may be only somewhat recursive. But German also has another possessive which is *fully* recursive (the latinized route, using "of", e.g. "the daughter of the father of my cousin"). Hence, Germans can express recursive possession by some conventionalized route. As far as I can tell from my data, there is no conventionalized route for Pirahã speakers to express recursive possession. This is a fundamental difference between the languages. Just a few examples of nested "von" plurals from the web include: *von den vater von meine frau; der Liedertext von Die Mutter von James Bond von Elsterglanz; zur lage von die sprache von Peter Kohler.*

On page 10, NPR say that they cannot understand how the lack of embedding follows from the IEP. As I have stated it in (1) this should now be obvious (though that of course does not make it correct). Let me restate it: in order to avoid non-assertions in declarative utterances, prohibited by the IEP, Pirahã has to avoid embedding. It does this by simply not having recursion. This also predicts the lack of multiple prenominal possessors and, as we see directly, potentially even the lack of numbers and counting (and if this is correct this lack is predicted both by the IEP directly and indirectly by the IEP's prohibition on recursion). So I must admit that I cannot understand their lack of understanding of this point (that they might not agree is another matter entirely).

No subordination: the so-called nominalization clauses with -sai

On page 14, NPR bring up the first of several examples that violate the claims of Everett (2005b). The first set of examples they use, all involving the apparent nominalizer, **-sai**. If they and Everett (1986) were correct, **-sai** marks embedding as nominalizers often do. But this suffix is misanalyzed in Everett (1986). This is because at the time I was writing and researching my PhD dissertation I was not reading the literature on information structure and because I relied too heavily on the elicitation methodology common to Generative Grammar. NPR claim that the suffix **-sai**, analysed by Everett (1986) as nominalizer, marks subordinate clauses and is, contra Everett (2005b), evidence that Pirahã does in fact have recursion. They note, for example that Koptjevskaja-Tamm (1993) has illustrated nominalization patterns in subordinate clauses that look very similar to Pirahã. However, in unpublished analysis subsequent to Everett (1986), I have discovered that **-sai** in fact marks old information and is not a nominalizer at all. Consider the fuller range of contexts in which **-sai** may be found (I am simplifying the glosses):

-sai on 'embedded' clauses:

- (11) (hi) 'oba'axa'i' (hi) kahai'-kai-sai.
 he sees well (he) arrow-makes-old information
 'He is really smart/very talented. (That is with respect to the fact that) he makes arrows well.'

never say a phrase like "John's car's motor", and I think it unlikely that I would spontaneously say even "the car's motor", because the apostrophe-s genitive has a strong preference for being used with people rather than inanimate objects; if I did use the phrase "the car's motor" I would have a feeling of anthropomorphizing the car a bit, like sailors calling a ship she. I know that Americans seem to use the apostrophe-s genitive much more freely, so they sometimes put it even on nouns for abstractions, where it sounds really bizarre to me."

no –sai in either clause:

- (12) (hi) 'oba'axa'i' (hi) kahai'-kai -bai
he sees well (he) arrow-make -intensive
'He makes arrows well.'

-sai on 'main' clause

- (13) hi 'oba'axa'i' -sai kahai' -kai -koi'
he sees well –old information arrow -make -intensive
'He makes arrows well.'

d. etc.

inflected verb 'to say' + inflected 'embedded verb' (no –sai)

- (14) (hi) gaxagaxaiabai' (ti) kaha'piisoogabagai'
he say (I) want to go
'He says 'I want to go.'

-sai on a morphological simple NOUN

- (15) ko'xoi' -sai (hi) kaha'pii'
name -old information he go
'Ko'oi left.'

Now it is true that Everett (1986) analyses the –sai as a nominalizer. It does commonly (but not obligatorily) go on new expressions, e.g. (15), to indicate their function as a noun (the translation before the / is the preferred reading, according to tests with native speakers):

- (16) a. xioho'i xiboi'ti
wind cut
'to cut wind/propellor'
- b. xioho'i 'iboi'ti -sai
wind cut -old information
'propeller/to cut wind'

I actually was the first person to apply the expression in (16) to a propeller years ago when the Pirahãs asked me what the propeller on a plane did. They liked my 'invention' and use it now as a name for propellers. The –sai commonly appears when the expression is used as a noun, but is not obligatory – another problem for the 'nominalizer' analysis of Everett (1986).

One of the first bits of evidence that led me to question my analysis of –sai as a nominalizer were examples of the addition of this suffix to morphologically simple nouns as in (15). Why would a noun take a nominalizer? This appears at first blush to be unlikely. But it is likely that –sai can attach to nouns when these nouns express old

information in a text, such as the topic. This insight, along with my readings in the growing research on information structure eventually led me to abandon the analysis of **-sai** as a nominalizer and look more carefully at the morphologically properties of what I had thought until then were embedded clauses.⁷ I came to the conclusion that **-sai** is in fact not a nominalizer at all but a marker of old information (see VanValin and Everett (in preparation) for more details). If this hypothesis is correct, it predicts that **-sai** can be used in a much wider range of structures than those in my thesis or the description in the Handbook of Amazonian Languages. Subsequent examination of texts and, more recently, experimental work conducted with Ted Gibson and Mike Frank in a Pirahã village support this.

So **-sai** is not like the nominalization patterns discussed by Koptjevskaja-Tamm (1993), as cited by NPR cite. Moreover, contra Everett (1986), as seen in the examples above, both sentences can be *fully* inflected, leading me to ultimately abandon my analysis of these as embedding in favor of the simpler and superior analysis of parataxis.

"The constituents that we (in agreement with HAL) would identify as complement clauses **look** quite *ordinary* from a cross-linguistic perspective. [emphasis on 'look' mine, DLE]" Let's think about this statement for a bit. Apparently, the methodology implied is just this. First, you 'look' at a structure in language x. If it 'looks' like a structure from language y, for which there is an analysis accepted in the Generative Grammar literature, then you may assume that this example from language x further supports the conclusions drawn from language y. We can label this the *methodology of 'eyeballing'*.

I would suggest an alternative method, one common to the American Descriptivists. Each construction in each language should be studied in its appropriate linguistic and cultural contexts before drawing any conclusions about it. This is one reason I almost agree with a statement that I overheard from a field linguist a few years ago that no one should be allowed to write an article about a language before they have written an entire grammar of the language. Only after writing a grammar of a language can you contextualize your understanding of how structures and constructions and meanings work in that language. NPR is rife with the eyeballing methodology and, as we see directly, this leads them not only to their embarrassing speculations about Pirahã, but erroneous and equally misinformed analyses of languages as well-known as German. Superficial similarities between languages count for next to nothing in mature analysis, except to fuel initial hunches. That is, they are fine if used abductively, but very bad when used deductively, as they are in NPR. To conclude this section, just as the example from my HAL description that NPR cite approvingly as parataxis on their page 14 is a

⁷ As a matter of potential historical interest, I did wonder about my own analysis as early as 1984. Everett (1986) was actually written in 1982 in Portuguese, appearing initially as Everett (1983) and later as Everett (1990). So since I was a Visiting Scholar at MIT during this time, I talked to Chomsky about my idea that there seemed to be very little evidence for embedding of any kind in Pirahã, apart from these **-sai** examples which I was beginning to question. We discussed it briefly and Noam gave me some ideas for further testing the idea. Mark Baker, writing his PhD under Noam at the time, mentioned to me one day as we were having lunch that Noam was really intrigued by the idea that a language might not have embedded (Mark said something like 'You really got Noam's attention with what you told him about Pirahã', or some such). In any case, though I had a growing suspicion that my 1982 analysis was wrong, based as I say here, on artificially and exclusively elicited data, I didn't have the time (I was then working mainly on phonology) nor the courage to develop these ideas further – not until 2004 at the Max Planck in Leipzig, did I have the occasion to reconsider in detail all of these ideas and begin to formulate a radically different analysis.

solid example of juxtaposition, so are the examples with **-sai**. NPR's example (10) is repeated here as (17):

(17) Paratactic conjoining [HAL 223, (95)-(96)]

- a. *xisaitoógií hi kapiigakagakai-bai xoogiái hi koihi xabaxáigio*
 Xisaitoógií 3 study- INTNSF Xoogiái 3 little only
 'Xisaitoógi studied a lot. Xoogiái (studies) very little.'
- b. *batío paga póoko xoogiái hi mais paga bii*
 Martinho pay little Xoogiái 3 more pay well⁸
 Free translation: 'Xoogiái pays better than Martinho.'

These, NPR say, are good examples of parataxis because the sentences are fully inflected and there is no **-sai** in them. But just as the other examples that have **-sai** do not obligatorily take it, so (17a) *can* in fact take **-sai**:

- (17') a. *xisaitoógií hi kapiigakagakai-bai(-sai) xoogiái hi koihi xabaxáigio*
 Xisaitoógií 3 study- INTNSF(-old information) Xoogiái 3 little only
 'Xisaitoógi studied a lot. Xoogiái (studies) very little.'

(17b) cannot take **-sai** because it is in fact a mix of Portuguese and Pirahã (the Pirahã was trying to make himself intelligible to me, because this was recorded when I was just learning the language, so he put in what Portuguese he was able to help me along – though notice that he uses Pirahã grammar). But the point is that these examples are no different in relation to **-sai** in principle than any others.

To sum up, **-sai** marks old information and is not a nominalizer. The sentences in (11)-(15) can manifest **-sai** on either clause, contra Everett (1986) or on neither clause, so both clauses can be fully inflected, also contra Everett (1986).

The evidence given here for parataxis is stronger than that given in Everett (2005b). One especially weak argument for parataxis in that paper was the evidence I provided for the absence of overt WH-movement across multiple clauses. I concede that that argument for parataxis was weak. Of course, the argument that remains is that there is no evidence for *covert* WH-movement across clauses either. But I will not enter into the murky world of covert movement, since the arguments given in this section are sufficient to establish that the 'embedded clauses' of Everett (1986) cited by NPR are not embedded clauses and that **-sai** is neither a nominalizer nor a subordinator.

⁸ NPR add to my gloss "[lit. 'Martinho pays little. Xoogiái pays better. - authors]". NPR once again change my Pirahã translation based on no more evidence than that it sounds better to them. But this does *not* mean 'better' in Pirahã. Pirahã lacks comparatives. The 'clumsier' translation in Everett (2005b), literally in the gloss in this example, is the only one that corresponds to the facts of the Pirahã language. In fact, since the Pirahã speaker here is using Portuguese, we can ask why he did not use the Portuguese comparative 'melhor'. Work in progress by Jeanette Sakel addresses the limited use of Portuguese by Pirahã speakers, including the degree to which the Pirahãs use Pirahã grammar when speaking Portuguese. (And there is no inconsistency with saying that they use bits of Portuguese here and there and that they are monolingual.) Again, I am bemused as to why people who have never learned a single word of a language feel at liberty to suggest translations for it, based on nothing more than their expectations from other languages. This is semantic eyeballing to match the syntactic eyeballing seen elsewhere.

The clarification-parataxis analysis thus accounts for many facts that the –**sai**/nominalization/subordination analysis does not account for. Let me summarize this in (18):

(18) –**sai** is not a subordinator:

- (i) the 'subordinate clause' is completely unnecessary (if the scope of negation were in fact the subordinate clause, this would be strange);
- (ii) the 'subordinate clause' need not be marked in any way;
- (iii) the subordinate clause has a separate intonational contour and is not phonologically 'attached' to the 'main clause' (it is separated by pause);
- (iv) the 'subordinate clause' can be separated from the main clause by a question.

These data are predicted by the analysis in Everett (2005b), i.e. that the relationship between the two clauses is parataxis.

This revised analysis of –**sai** as a marker of old information also predicts its occurrence on the verb 'to say' **gai** in quotatives, i.e. on what would normally be expected to be the main clause (e.g. **hi gai'-sai tiobahai kabiiga** 'He says-sai there is no child here.') 'He says NPR on p21ff strain and heave to offer an account of this distribution of –**sai** in their framework, but the 'old information' analysis predicts it straightforwardly, since the content of what is said is generally the new information, not the saying of it, which is the old information. But –**sai**, again, is not required even here (as data from Everett, which NPR cite, (1986) show)

It is correct that Everett (2005b), as NPR point out, says that the crystallized form of the verb 'to say', **gai** (with a low tone on the **a** and a high tone on the **i**), always seems to be accompanied by –**sai**. This is likely nothing more than a construction in the sense of Construction Grammar. But of course other forms of the verb 'to say' can be inflected, as can the content of the quote. As NPR show, I illustrated such forms in Everett (1986).

Monoclausal scope of negation

Now let us turn to NPR's discussion of examples (18) and (19) on the scope of negation. Consider first the English examples in their (18), my (19):

- (19) a. I am not ordering you to make an arrow.
b. I am not ordering you. Make an arrow!

Of course they are right about the English in (18). But their interpretation of (19), is wrong:

- (20) *ti xibiib-i- hiab- iig- á. kawai kai- sai*
1 order-EP-NEG-CONT-REMOTE. arrow make-old information
'I am not ordering you to make an arrow'⁹

⁹ The additional reading that Everett (1986) offers for (19) is 'I will not let you make an arrow.' But this is only a loose pragmatic reading and is generally not present, i.e. most speakers do not get this reading. To prohibit someone from doing something, one uses the prohibitive suffix –**saha'ai**, as discussed in Everett (1986, section 18).

The main assertion of the pair of sentences in (20) is 'I am not ordering you.' This is the main assertion because serves as an assurance in the context that another Pirahã value is not being violated, i.e. the value that no one should command anyone else (at least not one adult to another, though children are often ordered, but not always, by their parents). The following, independent clause in (18) adds a clarification. A free translation of the entire clause would be something like (21):

(21) I am not ordering you. (That is, that you) make an arrow.

The presence of the old information marker **-sai** supports this analysis, since the clarification would be old information in most cases. But the **-sai** is not necessary. One can just as easily find in conversation or texts examples like (from conversational exchange, November 1991):

- (22) a. *ti xibi'ibihabiiga'* 'I am not ordering you.'
 b. *goo gi'* 'What?'
 c. *gi'xai xogai' kaisai* '(That) you make a field.'
 OR d. *gi'xai xogai' kaixiiga'* '(That) you (be) making an arrow.'

'I am not ordering (you). What? That you make an arrow.'

On the issue of direct vs. indirect speech, Everett (1986) again was wrong, because the analysis was based on elicitation with only a couple of men and my interpretation of their judgments was incorrect. Only the direct speech translations are possible. This is additional data that led me to question my original analysis and to abandon the idea of embedding as part of the analysis of Pirahã clauses.

Parataxis vs. **-sai** subordination: a pseudo-problem

Again, though, I have nothing to add about NPR's discussion of WH words (p29ff) as an argument for parataxis, as per my statements above. In their (34), however, **-sai** is not necessary and both clauses may be fully inflected. Alternative forms are:

- (23) *hi go -o' xigi'ai kai -iiga'*
 he that there associate make -continuative

hi xoba'axa'i'
 he see well

'What is he making? He is really good/smart!'

Or for my other example ((33) in NPR), alternatives are:

- (24) *hi xoba'axai -iiga' hi kahai' kai -bai'*
 he sees well -continuative he arrow make -intensive

-sibiga

-deductive

'He is being really smart/knowing well. He really makes arrows.'

Moreover, **-sai** can appear on *either* clause, modulo the information structure of the discourse:

- (25) a. *hi xoba'axa'i' -sai hi kahai' kai*
he sees well -old information he arrow make -

-bai' -sibiga
-intensive -deductive
- b. *hi xoba'axai hi kahai kai*
he sees well he arrow make -

-bai' -sai
-intensive -old information

'He is being really smart/knowing well. He really makes arrows.'

So why does the interrogative clause come first in (34) if these are not a single sentence? Just because of the type of speech act this is. The principal speech act is a question and the additional clause is, again, clarifying information (and clarification clauses and postposed constituents are discussed in Everett (1986)), thus usually old information, thus more frequently marked by **-sai**.

Temporal clauses

NPR then proceeds on an excursus on temporal clauses of a type we have already seen, namely, the eyeballing approach where decontextualized sentences are pried loose from other languages and declared to be similar to Pirahã as though this alone constituted an argument about the analysis of Pirahã. So, for example, to NPR the 'temporal marker' **-so/-ao**, discussed on page 33 of NPR, seems to be a subordinator because of English/Indo-European bias. In fact, this marker can appear on independent clauses. So, for example:

- (26) *kab -a'ob -a'o soxo'a'*
finish -completive -temporal already

'I just finished.' OR 'I am about to finish.'

The **-a'o** is not a temporal connective/subordinator but rather it indicates 'boundary of an action'. Moreover, it can be omitted from what NPR might consider to be similar to subordinate clauses in other languages:

- (27) a. *koho'ai-xiiga' ti gi' xahoai-soogabagai'*

eat-continuative I you talk -want

'(You) are eating. I want to talk to you.'

- b. *koho'aikaba'oba'o* *ti gi'xahoai-soogabagai'*
eat-finish-completive-temporal I you talk -want

'(You) are about finished eating/you just finished eating. I want to talk to you.'

- (28) a. *piiboi' -so* *ti kaha'pii'* *-hiaba*
rain -temporal I go -negative

'It is about to rain. I won't go.'

- b. *piiboi' -iiga'* *ti kaha'pii'* *-hiaba*
rain -continuative
'It is raining. I won't go.'

If **-sai** is used in these examples instead of **-so/-ao** the result is different:

- (29) *piiboi' -sai* *ti kaha'pii'* *-hiaba*
rain -old information I go -negative

'It rains (topic of discussion). I won't go.'

This can also be interpreted as a conditional (e.g. 'If it rains, I won't go'), but need not be. This arises just in case the conversation is about raining and one adds information about their plans. But there is no evidence for subordination apart from the English translation.

Correlatives

NPR's discussion of my analysis of correlatives (p34ff) again fails to account for the facts. Consider one of the examples they cite (without the brackets):

- (30) *ti bao'saa'pisi'xogabagai'*. *gi'xai goo' bao'saa'pisi' biga'obi'i* *'aisigi'ai*.
I hammock want. you that there hammock show the same

'I want the hammock. You showed me that hammock, the same one.'¹⁰

The **goo'** here is often an interrogative. It literally means 'that there'. The second clause in (30), as I said in the cited earlier work, would indeed most often be interpreted as an interrogative. But not always. Further evidence on the meaning of **goo'** is given in (31):

¹⁰ NPR claim that they have not found **-sigiai** on a 'main clause' in Pirahã. Well, here is an example for them: **Pao'ai 'aisigiai -aaga** 'It is Dan, the same one.' (meaning, not someone else named **Pao'ai**, which is my name in Pirahã).

- (31) a. *hi igaha'oi ogioghi'*
he with want

'Which do you want?

- b. *goo'* 'That one'

- (32) *goo' 'aaga'*
that be

'That there is (the one)/Where is that?

So **goo** has a deictic function. In a correlative-like construction in Pirahã, this optional deictic marker in the clarifying, old information, sentence simply points in (imaginary or real space) to the item under discussion. Thus my translation of (44) of NPR, p35, would be 'I want the hammock. Chico sold that there hammock.' (Though, to be sure, it could also be translated as 'I want the hammock. What hammock did Chico sell?', pragmatics distinguishing the appropriate reading.) NPR's incredulity at their proposed translation of the two examples is well-motivated, but of course their translation has nothing to do with the actual facts.

Wh-extraction from embedded clauses?

Let's now consider NPR's purported example of "non WH-extraction from an embedded clause".¹¹ I first give the translations given by NPR (I have corrected NPR's glosses and the transcription a bit):

- (33) *poogaihai ao gái -sai -híai ahóahio ao*
bananas foreigner -say -old information-hearsay other day foreigner
hoaxá isai -híai
say it.look.for -hearsay

NPR's suggested translations for this example are:

- [?] 'Bananas is Steve's claim [that [he] will look for __ tomorrow]'
 i.e. 'Bananas, Steve said he would look for tomorrow.' (translations ours)

Before I offer the actual translation of these examples, I ask the reader to consider what might motivate people who have never even met a Pirahã and do not even know how to pronounce or understand a single word of the language to offer a translation of a

¹¹ I should add a clarification about the data here. NPR cite the source of their example as Filomena Sandalo, apparently having collected a text in 1998 by the Pirahã woman **'itaibigai** about Steve Sheldon. In fact, **'itaibigai** died around 1982 and this text was collected, transcribed, and translated by Steve Sheldon in 1970 or thereabouts. Filomena Sandalo did accompany me as an undergraduate student to the Pirahãs in 1985 and again as a PhD student some years later. However, she abandoned her plans to do a PhD on Pirahã because she was unable to learn to speak the language. All texts she collected in the field were translated by me.

complicated example of this language. The actual translation of this example, since the verb **gai** has a range of quotative introductory meanings, is:

'Steve talks about bananas. He will look for bananas another day.'

In fact, **poogaihi** 'bananas' can appear in either clause or both simultaneously:

- (34) *poogaihi* *ao* *gai* *-sai* *-hi* *ahóahio* *ao*
 bananas foreigner -say -old information-hearsay other day foreigner
- hoaxá* *poogaihi* *isai* *-hi*
 say banana look.for -hearsay

So there is no evidence either from the translation for extraction of any kind. And the repetition of the word for banana in both clauses rules out extraction (to the degree that anything can really be ruled out in a copying theory of extraction).

As for the other examples in (39), I say, as they note in the footnote that these examples are rare. *In fact, they are non-existent.* By this I mean that they never occur outside the artificial elicitation context in which they were created in 1980. They were uttered in another one of those completely inappropriate elicitation contexts that I and other fieldworkers have occasionally lapsed into with ill effects.

Summary: no recursion in Pirahã

Before turning to NPR's discussion of numerals, color terms, culture, quantifiers, and other non-grammar-related facts from Everett (2005b), let me summarize a few of the correct and very interesting predictions about Pirahã grammar and lexicon made by my hypothesis that it lacks phrase structure and recursion, based on the IEP. These are originally stated in (10) above, restated here:

- (10) a. No numerals or counting (since these are built on recursion, as per Wiese (2003)).
 b. No auxiliary verbs.
 c. No stacked possessors.
 d. No conjunction.
 e. No disjunction.

NPR curiously either fail to discuss these facts (they only discuss a & b) or they fail to even mention that they are *predicted* by my account and coincidental by their account (if they even exist by NPR's account).

**3. Lexical predictions of the IEP
 Numerals & Quantifiers**

It is interesting in light of Wiese's (2003) work on numerals, counting, and their relation to language that any number system requires recursion and that it borrows this recursion from the language. If she is correct, and her arguments seem convincing to me,

then if a language lacks recursion in its grammar, it ought to lack a numeral system. This is another correct prediction of my analysis that, so far as I know, no other analysis is able to make (and this does not require any appeal to Whorf, etc. though I return to this directly).

Recent experiments by Michael Frank, Dan Everett, Evelina Fedorenko, and Ted Gibson have strongly confirmed the absence of numerals and counting of any kind in Pirahã. (We are currently working on a paper to report these results.) I will therefore have nothing to add as a response to NPR's speculations/remarks on number.

So I move to discuss NPR's discussion of Pirahã quantifiers and their fierce 'pragmatic wind'. Simply put, there are no quantifiers in Pirahã because there are no words that *ever* meet the truth conditions of quantifiers. NPR lists on p37, ex (45), a number of 'quantifiers' from Everett (1986). Yes, folks, I *did* think that those were quantifiers 25 years ago. But I do not now. Why? For one thing, back then Lisa Mathewson (2004) had not written her beautiful article on the methodology of semantic field work and I failed to examine the truth-conditions of the words in (45). The words in NPR's (45) are in fact translated as:

- (36) a. **xogio'** 'that big'
 b. **xai'ba'i** 'be intensive'
 c. **ba'agiso** 'cause to touch' (i.e. to pile things, or bring things together)
 d. **ho'i** 'small'
 e. **hoi'** 'slightly larger'

My reasoning in Everett (1986) was pretty much like NPR's: (i) these words overlap in some contexts with English quantifiers; (ii) the best free translation, the least exotic translation, is as quantifiers. So they must be quantifiers, right? No. Considerations like (i) and (ii) are irrelevant for the final analysis.

The fact that Everett (2005b) no longer considers or translates these as quantifiers, rendering the free translation of them more awkward in English, does not mean that I am trying to 'exoticize' the language (contra the remarks cited by Wierzbicka, which I already responded to in Everett (2005b) and the similar remarks by NPR). I would be failing to express the richness and distinctness of Pirahã if I were to overtranslate just so that the free translation could look less strange to a small set of linguists who have a vested interest in finding these quantifiers in all languages (e.g. NPR and Wierzbicka). NPR's tactic in this section is basically '*We* can understand these examples better as quantifiers so we will so analyse them.' This is eyeballing, once again, not analysis, though it does have a long pedigree in some models of linguistics. However, as I have said repeatedly, and as I exemplify in Everett (2005b), these words never manifest the truth conditions of quantifiers. This is a matter that NPR and Everett (1986) fail to give sufficient consideration to. Of course it is true, as NPR mention on page 40, that a 'pragmatic wind' (citing Lewis (1986, 164)) can alter the truth conditions of quantifiers in some contexts. So the child who says to her mother 'But *everyone* is going!' probably does not mean that the residents of Beijing and Delhi will be in attendance. She just means lots of her friends will be there. This is to use the word *every* as though it meant 'many', 'most', or a 'large amount'. If this were its *only* use, however, then it would not mean 'every'. All words, not just quantifiers, can be semantically altered by context, i.e. by

a 'pragmatic wind'. Surely NPR doesn't think I am unaware of this fact? The point is that there are *no* words in Pirahã that have the truth conditions of universal or existential quantification or any other form I have been able to discover. That is, Lewis's 'pragmatic wind' is *always* blowing in Pirahã. So there are no quantifiers, folks, and NPR's reasoning doesn't alter this fact. Now I may be wrong. But that is why colleagues are going to the field to run experiments on quantification in Pirahã. That is, by the way, the proper way to test my claims. Not arm-chair speculation. Let us now turn to a discussion of color terms.

Color words

The words Everett (1986) lists as colors are all phrasal descriptions, a fact I was unaware of at the time. So translations for NPR's (49) from my PhD are in fact incorrect. The correct translations are (Everett's (1986) translations in parentheses):

(36)	a.	bii'-sai (occasionally bii-si and often just bii)	'blood' (red)
	b.	xahoasai	'immature' (green/blue)
	c.	kobiai	'see though it' (white/clean)
	d.	kopai'ai	'see up to it'
	e.	tixoho'i'	'small (purple) bug'
	f.	tioai	'shaded/out of the sun' (dark)

It is true that Steve Sheldon found a certain amount of consensus in color descriptions among the Pirahãs. But here is what he says about his own experiments:

"Again I would say that two factors are in play here. One I was not able to set things up so that each person replying had not had information about what others had said. Secondly, as I have followed Everett's later analysis on colors, I have come to believe that his statements are in fact a more accurate statement about colors and Pirahã." (Steve Sheldon, email to Everett March 11, 2007. Written to be cited here.)

On the other hand, it would be useful to repeat all of the Berlin & Kay color experiments with the Pirahãs. For this reason, I have had extensive discussions with Brent Berlin and Paul Kay and on a recent trip to Berkeley Kay gave me an entire set of the color sides, protocol, etc. to run the experiments again. We discussed ways to control the experiments more effectively, given Sheldon's difficulties. This will be done in a year or less. It is true that Berlin & Kay no longer claim that all languages will have morphologically simple color words.¹²

¹² We ought to observe, however, though the original hypothesis that color terms should be morphologically simple has been abandoned in favor of the reasoning cited from Kay by NPR on their page 41, this abandonment is a serious weakening of that hypothesis, an abandonment in effect of the *linguistic*

However, although colors definitely are part of our immediate experience – and so in that sense would not violate the IEP – the *naming* of them is a different thing altogether and *would* violate the IEP as stated in (1). There is a relatively large literature on the linguistics, anthropology, psychology, physics, and philosophy of colors and color naming (none of which is referenced by NPR). One particularly pertinent work is Lyons (1995), who observes that color is 'not grammaticalised across the languages of the world as fully or centrally as shape, size, space, time' (223). He therefore concludes that colors are the product of language under the influence of culture. One reason for the disparity in grammaticalization of color terms is that they require *generalizations* across the color spectrum that are different from the immediate experience, phenomenology, of shape, size, etc. This is why the IEP rules out the non-immediate experience-based naming of colors, though not the description of them. Colors are not straightforward adjectives in almost anyone's theory. The fact that there are no color nouns in Pirahã follows from this but is not the primary fact, contra NPR and is neither here nor there for the IEP's predictions regarding the lack of color words.

Pronouns

In discussing my claim that Pirahã lacks distinctions in number in its pronouns, NPR juxtaposes some Mandarin forms alongside forms from Steve Sheldon's earlier work on Pirahã. The forms by Sheldon are not translated correctly, however, and the Mandarin forms are irrelevant. The use of Mandarin here is just another example of the paratactic, eyeballing linguistics that NPR find so appealing. The '**aitiso**' particle that Sheldon mistakes for a plural marker is accurately glossed in NPR's (50) from Everett (1986) and marks a secondary discourse participant. As to their citation from Sheldon, Sheldon's analysis confused, in my opinion, the function of topicality with number in the gloss of '**aitiso**'. Sheldon offered the following comments for citation here after reading NPR (in an email to Everett on March 21, 2007). He first quotes NPR and then offers a comment below this:

"Everett (HAL 281) notes that Stephen Sheldon views such forms as tixaitiso as constituting a single word, and indeed Sheldon (1988,16 fn. 1) offersthe following pronominal paradigm for Pirahã (orthography adapted to HAL's conventions):(51) Pronouns in Pirahã (per (1988,16 fn. 1))

	<i>SING</i>	<i>PLURAL</i>
<i>1</i>	ti	tixaitiso
<i>2</i>	gí	gíxaitiso
<i>3</i>	hi	hixaitiso

This was my understanding at the time. Any early analysis must always subject to modification. I have not followed closely the discussion on pronouns. I have, however, modified many of my earlier thoughts on how Pirahã works. My 70's analysis of the language has changed as I have followed the work of Everett. I

component of their original hypothesis. What remains is the idea that the cognition of color follows a restricted set of patterns. I do not believe that Pirahã is a counterexample to that.

would be very reluctant to state emphatically today that my earlier analysis on the pronouns is correct. My cursory look at his analysis leads me to agree with his current views."¹³

There are no plural pronouns in Pirahã, period.
For example, consider the following examples:

- (37) a. hiaiti'ihí' hi xoba'axai'
Pirahã 3 smart/sees well
'The Pirahã are really smart.' 'The Pirahã is really smart.'
- b. xahaigi' hoi' hi kahapii'
sibling relatively larger amount 3 goes
'The two/three/four/etc. brothers left.'

In (37) the pronouns are constant regardless of number.

The arguments from NPR to the effect that since other languages (e.g. Karitiana (and for a much more detailed analysis of Karitiana, see C. Everett (2006))) also show a lack of distinctions in their pronouns similar to Pirahã and since the IEP fails to apply to those languages simply repeats the same misunderstanding of the relationship between culture and language that characterizes NPR's entire paper and the general approach to linguistics that it devolves from. No cultural-linguistic symbiosis is likely to be found in exactly the same form across languages. If there is a cultural principle behind the Karitiana facts, it will not be the same as the cultural principle behind the Pirahã facts. NPR's deductive approach apparently leads them to believe that a proposal entails cross-linguistic applicability. In fact, I would suspect the opposite: every language is non-trivially different from other languages in ways incompatible with UG: *there is no such thing as 'just a language'*, therefore.

NPR also say that Pirahã may not be the only language to have borrowed its pronouns and that there may have been other pronouns in the languages replaced by the borrowed pronouns. But there is nothing in the central thesis of Everett (2005b) that requires that Pirahã be the only language to have its borrowed its entire pronominal inventory. I thought that was the case. If not, it does not alter my thesis on the relation between grammar and culture in Pirahã at all. Nor does it matter whether the borrowed forms replaced earlier Pirahã forms or not. What matters is the function that they currently have.

Relative Tense

Since a relative tense entails an assertion about a point in time that is not the moment of speech (the Reichenbachian 'R' – see Everett (1993) for detailed discussion), by (1) above, perfect tenses are not permissible in Pirahã. Everett (1993) accounts for this by arguing that the three 'ingredients' of the calculus of temporal deixis in the Hornstein (1993)/Reichenbach (1947) system (**E**(vent); **R**(eference Point); **S**(moment of speech)),

¹³ With regard to the present paper's data, Sheldon goes on to say the following: "I especially looked carefully at the examples. I am always pleased to see that I understand well the examples given. I did not find anything I felt was wrong."

Pirahã only manifests E and S. This eliminates all perfect tenses and follows directly from the IEP.

Now let us turn to that aspect of Pirahã on which NPR are least qualified to opine, but which they take up in detail nonetheless – Pirahã culture.

4. Culture

NPR's data come largely from the work of Dr. Marco Antonio Gonçalves, a leading Brazilian anthropologist, a friend of mine, and one of the many people (see below) that I have introduced to Pirahã studies. Before beginning this discussion, let me give some historical background.

The Pirahã narrative about spirits and creation from Gonçalves's text, cited by NPR on their p44 & 45 is *not* a Pirahã text. It is pieced together from the Pirahã's pidgin-like Portuguese and Gonçalves's pidgin-like Pirahã (and that is Gonçalves's own description to me of how he worked). There is no such text in the Pirahã language. All existent Pirahã texts are on file at the University of Manchester, under the control of Eugenie Stapert, Nigel Vincent, and Jeanette Sakel. No such text exists. And if there were a Pirahã text on these subjects, Gonçalves would be the first to admit that he would need help in translating it. In this text there are certainly many elements that are Pirahã and many that are not. Next to none of this is found in Pirahã texts, though what Gonçalves says about the different kinds of spirits I have observed as different Pirahãs have become 'possessed' (and this is more or less how they describe it) and said that they are one or the other of the spirits Gonçalves describes, with many of the very properties he attributes to them in his writings. But there are no counterexamples in any of this to the IEP. This is because, as I have said many times, the Pirahãs actually see these spirits and they see the on-going creation too! For example, one Pirahã explanation for illness is when a spirit has brought an object from their hole under the ground or their hole in the sky and placed it on a Pirahã path. A Pirahã will inadvertently step on this and become ill. The Pirahã can show you these leaves, the holes, etc. These are to them real experiences and seeing spirits to them is as real as seeing macaws. There is no violation of the IEP in any of this.

5. Pirahã are monolingual

Over the years many visitors to the Pirahãs have doubted my claim that the Pirahãs are monolingual (the latter largely by choice because speaking Portuguese would entail grammatical and lexical properties that violate the IEP). They say hello and the Pirahãs say hello back. They ask if there are any fish and the Pirahãs say that there are fish or are not fish. Many Pirahãs can communicate at a rudimentary level in Portuguese. But they lose the gist of conversations very easily and often after someone has left they ask me to interpret. Recently, for example, the Brazilian health foundation, FUNASA, began working among the Pirahãs. When the first group arrived, I offered my assistance as an interpreter. I was initially rebuffed with "These people speak Portuguese. We have already exchanged a few words, so we don't need any help, thank you." Within a few minutes, though, someone comes up the path to my house to ask for help communicating with the Pirahãs because 'they don't speak Portuguese'. The best speakers of Portuguese among the Pirahãs speak it about as well as I do French. I can say a few things and find a bathroom, but I am not ready for any conversation of any depth at all. Currently Jeanette Sakel is studying the language contact between Pirahã and Portuguese and has discovered

that, at least for the subjects she has worked with so far, their 'Portuguese' is Pirahã grammar with a small lexicon of Portuguese. Her on-going research will undoubtedly force me to revise some of my views on this matter, but there are no Pirahãs who speak more than a little bit of Portuguese, using Pirahã grammar.

There is an interesting anecdote about the Pirahã's monolingualness. In February 1985, the Brazilian National Indian Foundation (FUNAI) contacted me while I was a Visiting Scholar at MIT and asked me if I would be able to join an expedition to identify the lands used traditionally by the Pirahãs, in order to eventually demarcate a reservation for them. *FUNAI paid for my travel from the US to the Pirahãs in order to serve as interpreter, because the Pirahã are monolingual* and I was one of only a handful of people who can speak Pirahã (the others being Keren Everett, Steve Sheldon, and Arlo Heinrichs) and the only one known to FUNAI. When I arrived to join the FUNAI team at the mouth of the Maici, they had been attempting to communicate with the Pirahãs for three days, without success. They said, once I arrived and started talking to the Pirahãs, "OK, now we understand why we had to wait for a gringo to come help us."

6. Miscellaneous ad hominem remarks by NPR

NPR is careful not to call me a racist, but they come very close in their final section.

First, they use a quote that the Pirahãs talk like chickens and act like dogs that I overheard from local Brazilians. I have used it in many publications and lectures. Why? To show how abhorrent the views of outsiders have been of the Pirahãs and the difficulties the Pirahãs face in their daily lives, the racism that surrounds them and for which they need assistance. Perhaps NPR thinks that I endorse this Brazilian view because I do not condemn it in this particular quote. Well, I hereby condemn it, as I have in every other place I have used it. I intended it to be obviously sarcastic and ironic and clearly I failed to communicate this in this particular quote, at least for NPR.

Second, when I said that the two women in the picture referred to by NPR were 'playing at writing' I was just quoting the women themselves. They asked me if they could play for a while. And I said sure.

Finally, as for saying that someone made an 'attempt' to draw a number, I did not say that that attempt was unsuccessful. He said he wanted to try to make a number. So I loaned him paper and pen and he tried, as he said he was going to. And he did a good job. A great first effort.

NPR cite with approval the ethnocentric quote from S. Levinson that Everett (2005b) presents the Pirahãs as primitive by focusing only on the perceived gaps in their language. I have published a large amount on Pirahã since 1977. I give a list in (37) of some of the things I have published on Pirahã over the years. Of this entire list only two papers, Everett (2005b) and Everett (1993) focus on curious gaps. But my other work has dealt with things that Pirahã *has*, not gaps. My focus has always been on the things I find interesting and certainly not on gaps.

(37) Publications on Pirahã by Everett

2005 'Cultural Constraints on Grammar and Cognition in Pirahã: Another Look at the Design Features of Human Language', a CA* article in *Current Anthropology* 76: 4, 621-646.

In preparation b *Don't Sleep, There are Snakes: Lessons on Life, Language, and Thought from the Amazon* (Pantheon Books (hardback), Vintage Books (paperback), after Summer 2007)

- 2001 (with Sarah Grey Thomason) 'Pronoun Borrowing', *Proceedings of the Berkeley Linguistics Society*, Volume 27, invited plenary address.
- 1996 *Why There Are No Clitics*, Summer Institute of Linguistics and the University of Texas at Arlington Series in Linguistics, Dallas, TX (188pp).
1993. 'Sapir, Reichenbach, and the Syntax of Tense in Pirahã', *The Journal of Pragmatics & Cognition*, 1:1, pp 89-124.
- 1992 *A Língua Pirahã e a Teoria da Sintaxe*, Editora da UNICAMP (400pp).
- 1988 'On Metrical Constituent Structure in Pirahã Phonology,' *Natural Language and Linguistic Theory* 6, pp 207-246.
- 1987 'Pirahã Clitic Doubling,' *Natural Language and Linguistic Theory* 5, pp 245-276.
- 1987 'O Diálogo e a Seleção de Dados para uma Gramática,' In: Marcelo Dascal (ed.) *Encontro Internacional de Filosofia da Linguagem, Cadernos de Estudos Lingüísticos*, 11, 21-38. UNICAMP.
- 1986 'Pirahã,' In: Desmond Derbyshire and Geoffrey Pullum (eds.) *Handbook of Amazonian Languages I*, Mouton de Gruyter, Berlin, pp200-326.
- 1986 'Pirahã Clitic Doubling and the Parametrization of Nominal Clitics,' In: Naoki Fukui, Tova Rapoport, and Elizabeth Sagey, (eds.) *MIT Working Papers in Linguistics* 8, Department of Linguistics and Philosophy, Massachusetts Institute of Technology, 85-127.
- 1986 'Ternary Constituents in Pirahã Phonology,' In: Desmond Derbyshire (ed.) *Workpapers of the Summer Institute of Linguistics - University of North Dakota* 30, SIL, Dallas, pp 13-41.
- 1985 'Dialogue and the Selection of Data for a Grammar,' In: Marcelo Dascal (ed.) *Dialogue: An Interdisciplinary Approach*, John Benjamins, Amsterdam, pp 251-267.
- 1985 'The Parametrization of Nominal Clitics in Universal Grammar,' *Glow Newsletter*, February, pp 36-38.
- 1985 'Syllable Weight, Sloppy Phonemes, and Channels in Pirahã Discourse,' In: Mary Niepokuj et.al. (eds.) *Proceedings of the Berkeley Linguistics Society* 11, pp 408-416.
- 1984 (with Keren Everett), 'Syllable Onsets and Stress Placement in Pirahã,' In: Michael Wescoat, et. al. (eds.) *Proceedings of the West Coast Conference on Formal Linguistics III*, Stanford Linguistics Association, Stanford University, pp 105-117.
- 1984 'Sociophonetic Restrictions on Subphonemic Elements in Pirahã,' In: A. Cohen and M.P.R. van den Broecke (eds.) *Proceedings of the X International Congress of Phonetic Sciences*, Foris, Dordrecht, pp606-610.
- 1985 *O Desenvolvimento da Teoria Chomskyana: Uma Discussão Epistemológica*, RLEE, Lima, Peru.
- 1984 (with Keren Everett), 'On the relevance of Syllable Onsets to Stress Placement,' *Linguistic Inquiry* 15, pp 705-711.
1983. *A Língua Pirahã e a Teoria da Sintaxe*, ScD Thesis, Universidade Estadual de Campinas.
- 1982 'Phonetic Rarities in Pirahã,' *Journal of the International Phonetics Association*, December, pp 94-96.
1979. *Aspectos da Fonologia do Pirahã*, unpublished MA Thesis, Universidade Estadual de Campinas.

7. Stimulating further research on Pirahã

NPR list as one of the motivations behind their paper a desire to stimulate further research on Pirahã.¹⁴ *Well, they could certainly have gone there themselves to set an example.* In the meantime, Pirahã has probably been researched and visited by more linguists, anthropologists, and students than most, if not all, Amazonian languages. This is almost exclusively a result of my efforts and it has long been a priority of mine to stimulate further research. Here are some of the people that I have gotten to go to the Pirahãs over the years:

¹⁴ As though one paper by some armchair linguists who wouldn't be able to pronounce a single Pirahã word is the place to begin.

Students: 2 UNICAMP undergraduates (of which Filomena Sandalo was one – all of her data come from me or were translated by me); 5 UNICAMP graduate students; 3 University of Pittsburgh graduate students, and the following researchers with specific research agendas:

Researchers:

Marcelo Dascal: Professor of Philosophy and Dean of Humanities, Tel Aviv University. Dascal went to collect data on Pirahã metaphors and their cosmology.

Peter Gordon: Professor of Psychology, University of Pittsburgh (now at Columbia University), went to test my claim that the Pirahã did not count. His results confirming my claims were published in Science

Peter Ladefoged: Professor of Phonetics, UCLA (deceased) – went to check my claims about Pirahã stress and segmental phonetics.

Tecumseh Fitch: Professor in the School of Psychology, St. Andrews University, Scotland – went to conduct research on Pirahã recognition of finite-state vs. non-finite state grammars.

Jeanette Sakel, Research Associate, University of Manchester – has begun on-going investigations into the Pirahãs' use of Portuguese and general claims about the Pirahã grammar, e.g. whether or not it has recursion.

Eugenie Stapert, PhD student, University of Manchester – has begun field research for a dissertation on the role of recursion in Pirahã grammar.

Edward Gibson, Professor in Brain and Cognitive Sciences, Massachusetts Institute of Technology – has begun research on Pirahã recursion, counting, memory, and a range of other psycholinguistic tasks.

Michael Frank, PhD student, Massachusetts Institute of Technology – has begun research on Pirahã recursion, counting, memory, and a range of other psycholinguistic tasks.

Evelina Fedorenko, PhD student, Massachusetts Institute of Technology – has begun research on Pirahã recursion, counting, memory, and a range of other psycholinguistic tasks. (Did not go to the Pirahãs but contributed several experiments for our research team and is currently co-authoring a paper on Pirahã.)

Leo Wetzels, Professor, Free University of Amsterdam – went to consider possible work on Pirahã phonology.

MarcoAntonio Gonçalves, Anthropologist (as per discussion above).

8. The implications of Pirahã and languages like it for Generative Grammar

On page four, NPR say that my criticisms of Universal Grammar are beside the point because, among other things, "'Universal Grammar' is nothing more than a name for the human capacity for language, an aspect of our genetic endowment.' Their characterization of Universal Grammar is misleading and follows a typical style among generativists, which just asserts that there is no alternative to Universal Grammar. But their use of the words 'nothing more' is very telling. There is no linguist who would debate whether there is a human capacity for language. But this is not what UG is. UG is a set of constraints (maybe the singleton set of recursion according to some recent work) *specific* to language and that is precisely what I claim that the Pirahã data are a counter example to. Additionally, the Pirahã facts are evidence for a *general* human capacity for

language, i.e. the human brain interacting with the environment. This idea is further developed in Everett (in preparation b) and also characterizes various productive research programs, e.g. the work of Michael Tomasello at the Max Planck Institute for Evolutionary Anthropology in Leipzig, Germany, among many other research programs. There *are* alternatives to Universal Grammar and the fact that NPR insists on characterizing the issue as though there were no alternatives, although typical, is either ignorant or purposely misleading.

They come by this naturally, however, since the originator of the idea of Universal Grammar insists on characterizing it in a similar fashion. In what follows I summarize some recent emails from Chomsky. (If anyone would like to see these emails, just contact me.)

Chomsky says in an email to me on April 07, 2006, that every linguist has at least tacitly supposed some version of UG, no matter how much they deny it. Yet in the same message, Chomsky denies that it is possible to define UG precisely.

But this is little more than sloganeering. The idea that every linguist presupposes UG *seriously* confuses the *general* human capacity for language, our brains (which every linguist does presuppose), with a hypothesized *specific* human capacity for language mentioned in the first part of the quote (which perhaps a minority of linguists presuppose but which has never been shown to have any similarities in organization or dedication similar to the visual system). But NPR doesn't even get that part about UG right. Moreover, even if we were to suppose something as baroque as a Universal Grammar, it makes no predictions that I can see. And Chomsky agrees with me on this in further emails of April 2006, in which he argues that UG is a field of study, not a hypothesis. He further argues that the only alternative to UG would equate his granddaughter with a kitten. Chomsky believes that denying UG loses the ability to explain the banal fact that his granddaughter learns language but kittens do not.

Well, Chomsky and I agree on one thing: UG makes no predictions. Chomsky's tack, i.e. to characterize UG as a field of study, e.g. biology, is ludicrous. But the really crucial sleight of hand in the quote from Chomsky is to think that if I do not believe in a language-specific genetic endowment, I must believe that his granddaughter is a kitten. That is to take the utterly predictable, wearying, and rhetorically fudging tactic that is typical of Chomsky and his followers that there just is no alternative to his proposals. There are alternatives. One is quite obvious: kitty cats don't have human brains. Whatever the *general* properties are that distinguish human brains from those of other species, those might well be investigated before coming to the conclusion that there is a module in the brain or a language organ dedicated strictly to language. For more on this see Everett (2005a, 2006) a still unanswered criticism of one proposal for the notion of language organ. Part of any serious exploration of alternatives to UG is to look at a wider range of possibilities than UG predicts, e.g. the fact that languages might lack intertranslatability, have different degrees of expressive power, lack this or that 'crucial' component of language, or that culture impinges on the form of the entire grammar to a degree not predicted by UG. And that is what Everett (2005b) tries to do. It might be wrong. But it is not misguided or in need of a remedial course in what UG is.

In other words, they were committed, long before Everett (2005b) came on the scene, to the idea that all languages are, to paraphrase the authors, 'just languages', i.e. that there is no significant grammatical deviation from whatever the current set of

principles and parameters are for Generative Grammar. Their theoretical orientation is thus very clear and the tack that they take in all of their writings, this one included, is to defend a vested interest in the Chomskyan framework. If I, Sapir, Boas, or anyone of a large number of other linguists in the American descriptivist tradition are correct, however, languages emerge from a complex symbiosis of culture, general cognitive constraints, and the general properties of communications systems. In this tradition, there is no need for a Universal Grammar, in fact, it makes the wrong predictions, and the variation and relationships between languages and cultures are much richer and more diverse than Chomskyan theory contemplates. Cultures are free to shape languages subject to the limits of general cognition and communication, in radically different ways. Even some modern syntacticians in the theoretical tradition have begun to call for a move away from the largely deductive approach to grammar represented by Chomsky and the authors of 'Pirahã Exceptionality'. One important and very convincing set of proposals is found in Culicover and Jackendoff (2005), which NPR do not mention.

For example, if I am correct that Pirahã lacks recursion and that this is a result of culture, the one could make a case that the entire Chomskyan research program is largely in error. This is the case that I in fact do make in Everett (in preparation b).

In developing my views I have been strongly influenced by American Pragmatism and the Pragmatism-influenced work of Franz Boas. Boas believed, among other things, that 'cultural phenomena are of such complexity that it seems to me doubtful whether valid cultural laws can be found.' I am inclined to agree. This view has always been controversial, though, because it violates the ideas that many people have of what science should be about, i.e. generalizations. So, for example, one critic of Boas, Leslie White, (White 1943, 355) claimed that Boas's philosophy was a 'philosophy of planless hodge-podge-ism'.

Boas, trained in physics, was aware of the epistemological significance of what he was doing, however. He became convinced nevertheless that what we need in anthropology and linguistics is to abandon the search for laws, at least as the principal goal of our fields. He called the law-seeking approach to knowledge the 'nomothetic' view. For Anthropology and Linguistics he advocated instead the 'idiographic' (historical-narrative) approach to linguistics and culture. To tell contextualized stories of how languages and cultures fit together, for example, realizing that what we say about one language may not fit the next one we look at, is idiographic. This is also in keeping with the important philosophical work of Richard Rorty in contemporary intellectual life.

How can we explain the fact that if Everett (2005b) is correct, Pirahã seems to be so rare or, to use NPR's words, so 'exceptional'? I believe that the answer is provided by Benjamin Lee Whorf. The exceptionality is a problem of language, the linguist's theoretical language. Linguists learn words from theories that lead them to categorize their world in a certain way. They go to their research armed with these categories. They are prepared to find and fit things into these categories and also to overlook things that do not fit into these categories. This is the way of all science, in fact. Discoveries and breakthroughs emerge from the researcher's ability to invent new categories and unshackle themselves from the categories prevalent in their field. Not that we should avoid categories or theories, etc. Not at all. We ought just not to take them *too* seriously. They are not Truth. The concept of Truth does not do anything useful for us, at least not

according to the American Pragmatists (see also Everett (in preparation b) for the initial statement of a Pragmatist or Jamesian Linguistics).

9. Conclusion

The claims made by Everett (2005b) most certainly need to be tested and retested by additional field research. As is clear from the above list of scholars and students that I have taken to the Pirahãs, there have been and continue to be serious efforts to do this testing. One can only wonder why, if NPR are so interested in Pirahã, they have made no effort to do field research there of their own. Rather, they have limited their efforts to bibliographic research. Moreover, their research also shows (especially clear in their erroneous analysis of German) an overreliance on printed sources (a type of logocentrism and penchant for decontextualized examples that is so reminiscent of the notion of divine inspiration of texts and proof texts common to many fundamentalist religions. In fact, in Everett (in preparation b) I explicitly compare Chomskyan Generative Grammar to a type of fundamentalism across several parameters).

This raises the question of how any discipline could produce the kind of eyeballing, armchair linguistics that NPR engage in. The answer seems to go back to how linguistics as a discipline has been professionalized since the early 20th century. It has moved out of language and anthropology departments, where I believe it belongs, into isolated departments of linguistics where language is pursued less as a natural phenomenon and more as a mathematical, logical system, at least in some departments, producing a methodology that gives more attention to rigor in *talking about data* than to rigor in *gathering data*, relying more on subjective intuitions of speakers. John Searle (2006) notes a similar problem in modern philosophy of language. The methodology of Linguistics has arguably fallen behind that of standard social science research in many respects. So, for example, NPR fails to propose experiments or research to test my claims, but merely uses the library. This can only lead to the kind of pseudo-research that we see in this paper. On the other hand, this does not explain the more egregious attacks on my character at the end of NPR. I am only going to say about this that NPR has made an enormous effort to discredit my linguistics research and, for some reason, to also insinuate – again from contrived and decontextualized examples, that I have a prejudiced view of the Pirahãs. This is a sociological problem that I take up in greater detail in Everett (in preparation b).

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