

Language and Culture

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- *It does not seem likely ... that there is any direct relation between the culture of a tribe and the language they speak, except in so far as the form of the language will be moulded by the state of the culture, but not in so far as a certain state of the culture is conditioned by the morphological traits of the language.*
- *, 1911*

- *“Language is, as it were, the outer appearance of the spirit of a people; the language is their spirit and the spirit their language; we can never think of them sufficiently as identical... [we] must seek the nature of this individuality in every case in its structure.”*
Wilhelm von Humboldt, *On Language*, (1999 translation, Peter Heath, p46ff)

The poverty of communication:

- Language is barely good enough
 - Divorces
 - Arguments
 - Multiple readings
 - Biblical interpretation
 - Whisper game

.

How specific is the genome for grammar?

To argue convincingly that grammar is innate, we must first show that it cannot be derived from independent factors. Is there any significant grammar 'left over' once we have explained what we can in terms of: *Logic; Mathematics/Statistics; Semantics; Phonetics; Sociolinguistics; Cognition; Culture; Diachrony; Functionality*. Aspects of syntax independently derivable from these other factors shouldn't be ascribed to the genome as well. The prognosis is dim.

Genes and Culture

- We all know that human biology in some way underwrites human language. The debate is on the specificity of how this is accomplished.
- Humans have fewer genes than corn.
- Genes generally take millions of years, but they can be culturally influenced, perhaps even induced by culture (Boyd & Richardson).
- *The relationship of genes to phenotype in humans is non-linear.*
- *Neural microcircuitry is culturally shaped. (Neuroanthropology)*
- *There are no known language-specific genes or regions of the brain.*

Genetic Change and Culture

- Lactase Persistence : App. 5000 -10000 years ago
- Tibetan Change for Oxygen Saturation: App. 3000 years ago.
- Pro-drop: 6500 years old?
- Prediction: Natural mutations and selectional pressure are predicted by UG to render some languages unlearnable by some populations (Lieberman, 2013)

Culture

- What is culture?
 - Living in a culture vs. living culturally
 - Culture vs. values
- A tree branch moving up and down can indicate the presence of mobile meat. (Etic vs. Emic)
- Rousseau was one step behind - language is the socio-cultural contract. (John Searle, "What is Language?")

Examples from Pirahã Cultural Values

- Food
- Evidence
- Conservatism
- Correction by others
- Credibility extended

People of Rimrock: A Study of Values in Five Cultures

- Vogt, et. al. - Clyde Kluckhohn project
- Ranking Values
- Constraints on what is talked about
- Constraints on how it is talked about
- Piraha ethnophonetics (women vs. male phonetics; use of the double-flap and bilabial trill)
- IEP - shortly
- An attempt to unify a number of apparently disconnected features.

Culture, Grammar, and Cognition: Compatible Approaches

COGNITION, GRAMMAR, CULTURE CONNECTIONS

Constraint Relationship	Representative Theory
1. <i>cognition</i> → <i>grammar</i>	Chomsky's Universal Grammar
2. <i>grammar</i> → <i>cognition</i>	Linguistic Relativity (Whorf)
3. <i>cognition</i> → <i>culture</i>	Brent Berlin and Paul Kay's work on color terms
4. <i>grammar</i> → <i>culture</i>	Greg Urban's work on discourse-centered culture
5. <i>culture</i> → <i>cognition</i>	Long term effects on thinking of cultural restrictions on certain behaviors
6. <i>culture</i> → <i>grammar</i>	Ethnogrammar; individual forms structured by culture

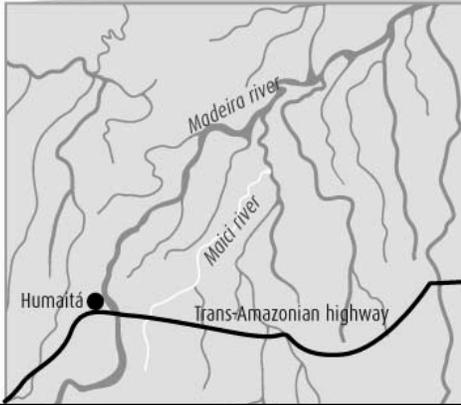
The Hiaitíihí (Pirahã)

The 'straight ones'

SWEET HOME AMAZONAS

The Pirahã live along the banks of the Maici river, a tributary of the Madeira river, in south-west Amazonas state, Brazil

The population has shrunk from 50,000 two centuries ago to just 350 today, but the people remain protective of their unique culture. Most only speak Pirahã, and shun the trappings of the modern world



The Language

Prosodic Channels of Discourse

a. **HUM SPEECH:**

when mouth is full, Child language acquisition

b. **YELL SPEECH:** *Long distance, Rainy days, Most frequent use – between huts & across river*

c. **MUSICAL SPEECH:** (*'big jaw'*) *New information, Spiritual communication, Dancing, flirtation*

d. **WHISTLE SPEECH:** (*sour or 'pucker' mouth'*) *Hunting, – same root as 'to kiss' or shape of mouth Men-only (as in ALL whistle after eating lemon))*

Channels in American Speech

- CV Channel
- ASL Channel

Hum Speech



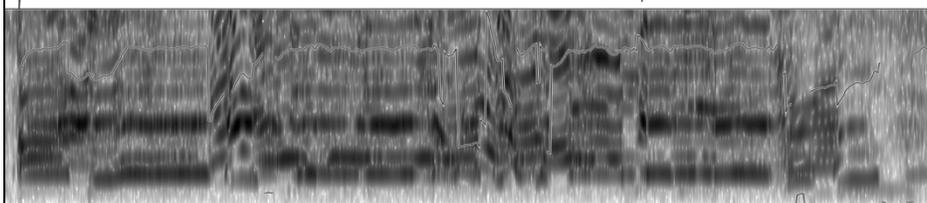
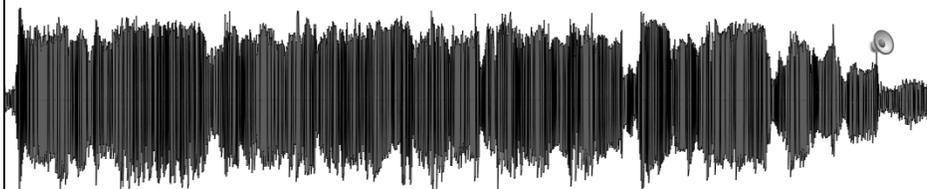
Whistle Speech



Bloodless talk



Musical Speech (“singing”)



Χαάγίι χίι τι χίι χίγιοό. Τι χίγίαι χμμή...

Path wood (trees) I trees with. I with (them). Hmm...

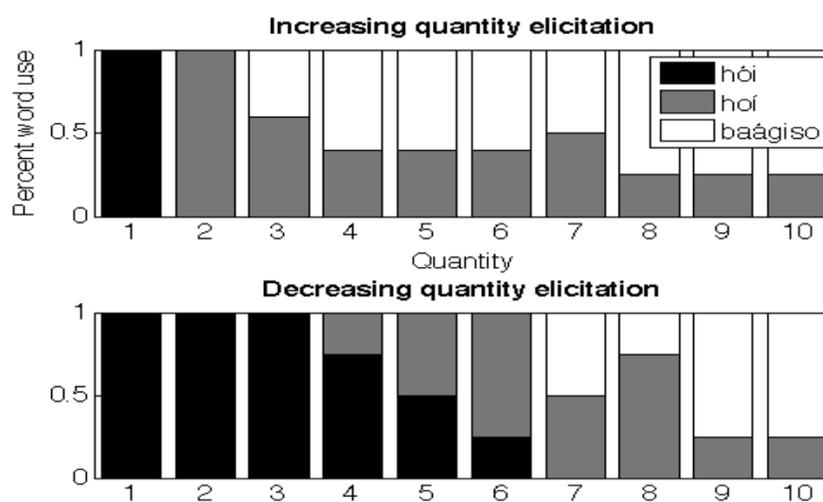
The tones are normal word tones, though the tonal rises and falls are exaggerated. No special melody. No special theme. They can be repeated. Closest to formulaic.

Numbers as a cognitive tool: Frank, Everett, Fedorenko, & Gibson

Does speaking a language without number words change the way speakers of that language perceive exact quantities?

We show that the Pirahã have no linguistic method whatsoever for expressing exact quantity, not even “one.” These results suggest that language for exact number is a cultural invention rather than a linguistic universal, and that number words do not change our underlying representations of number but instead are a cognitive technology for keeping track of the cardinality of large sets across time, space, and changes in modality.

What different counting directions illustrate.



The question of polysemy

- Could there be a word that meant “big” and “all”?
- Could there be a word that meant “one” and “few”?
- Well, yes, of course. But there isn’t.
- Could this be wrong? Well...
- Could anyone be wrong?

No Grammatical Number

hiaitíhí hi kaoáibogi bai -aagá

Pirahã people he evil spirit fear -be

"The Pirahã are afraid of evil spirits,"
 "A Pirahã is afraid of an evil spirit,"
 "The Pirahã are afraid of an evil
 spirit," or " A Pirahã is afraid of evil
 spirits."

No Quantifiers

No lexical items, no binding, no truth conditions of quantifiers.

Hi hiaitíhí xogixáagaó koabaiípi

'He killed **a lot of** Pirahãs.'

Ti xogixáagaó 'ítii' isi xogió xi kohoaibaái. Koga hói hi hi kóhoihaba

'A lot of us ate **a lot of** of the fish. We didn't just eat a little (contrary to what you might expect).'

No Quantifiers: 2

Xigihí hi xogiáagaó xoga hápií. Xaikáibaísi, Xahoáápati píó, Tíigi hi píó, 'ogiáagaó

'The **bigness** of/a lot of men all went to the field, Xaikáibaísi, Xahoáápati, Tíigi their **bigness** went.'

Gátahai hóihii xabaxáigio 'aoaagá xagaoa koó

'There were (a) **few** cans in the foreigner's canoe.' (literally: smallness of cans remaining associated was in the gut of the canoe')

Oral Literature

- No Creation Myths
- No Oral History
- No Religion
- No Fiction
- They DO have a cosmology and view of their place in the universe
- They DO claim to have experience with “Fastmouths.”

Limited Time Words

NO TIME LIKE THE PRESENT

The Pirahã tend to talk almost exclusively about the here and now. They do not celebrate birthdays or anniversaries. They do, however, recognise the passage of time through wet and dry seasons, and use the full moon as a simple calendar. The complete list of Pirahã words for time runs to just 12, as follows:

Pirahã word *Meaning* *Literal translation*

<i>'ahoapió</i> another day other at fire	<i>so'óá</i> already time-wear	<i>ahoái</i> night be at fire	<i>'ahoakohaiho</i> early morning, before sunrise at fire inside eat go
<i>pi'i</i> now	<i>kahai'ai'ogiiso</i> full moon moon big temporal	<i>piáiso</i> low water water skinny temporal	<i>hibigibagá'áiso</i> sunset/sunrise he touch comes be temporal
<i>hisó</i> during the day in sun	<i>hisóogiái</i> noon in sun big be	<i>hoa</i> day fire	<i>piibigáiso</i> high water water thick temporal

The tool principle

- a. **Greater Dependence on the Tool →
More likely it will be used.**
- b. **Lesser Dependence on the Tool →
Less likely it will be used.**

Cultural Factors

- **Societal Intimacy:** As in *Society of Intimates* vs *Society of Strangers*. The former share nearly 100% of knowledge and expectations of discourse content. (vs. Societies of Strangers in which few expectations on possible discourse content.)
- **Individual Cultural Values**
 - **Information Rate;** cultural conservatism
 - **More narrow values:** *Immediacy of Experience*.

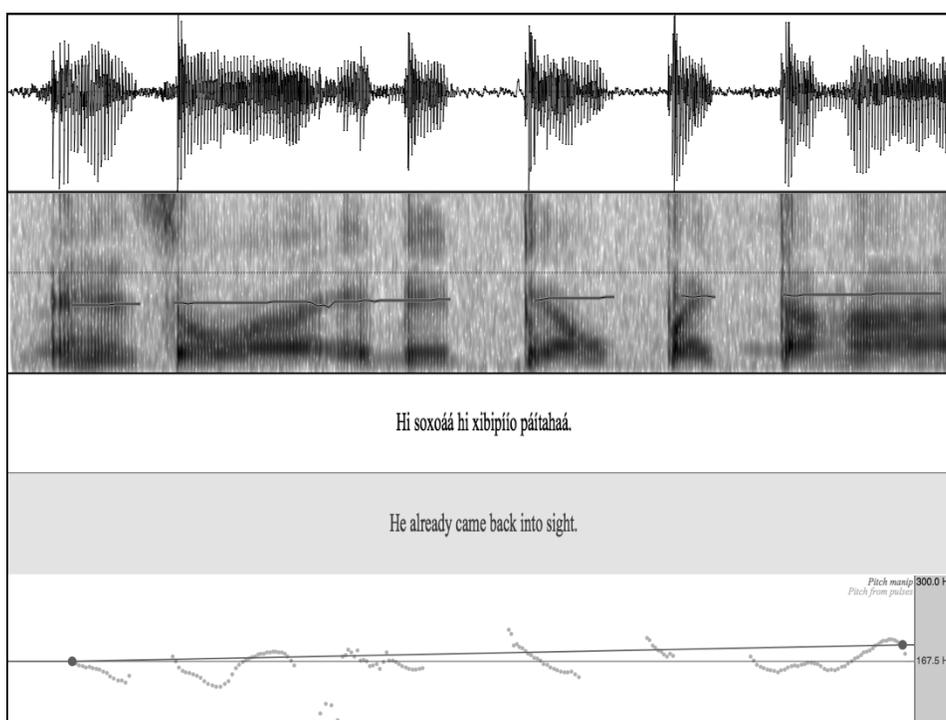
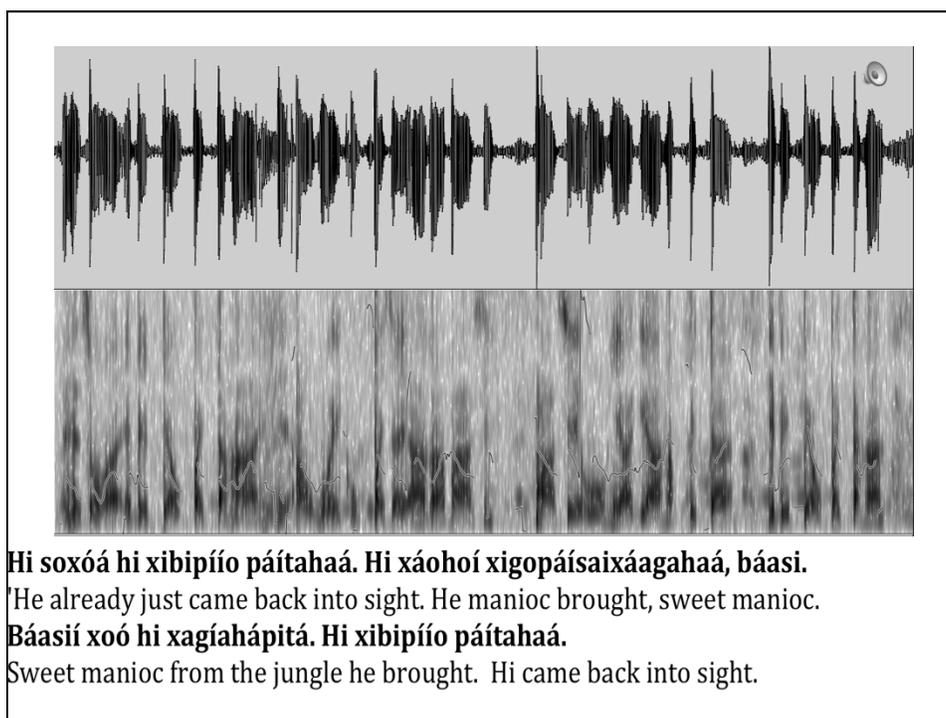
The Cultural Task:
Keep Information Slow; Keep It Verifiable

Keep the information rate low – the
value of cultural conservatism –
carefully separate topics and
comments

It must be witnessed (you saw it or
someone who saw it told you)

Xibipíio

Experiential liminality – a focus on the
boundaries and immediacy of
experience.



Immediacy of Experience

'Declarative Pirahã utterances contain only assertions related directly to the moment of speech, either experienced by the speaker or as witnessed by someone alive during the lifetime of the speaker.'

- 1) Explains time words; discourse content; lack of creation myths; contentment, perhaps.
- 2) Other characteristics of the language, e.g. lack of recursion, follow from being a society of intimates, by the **tool principle**:

Speech Act is Central to Immediacy of Experience Principle

Recursion as a Tool: Evidence for Cultural Design

- HC&F (1573): “In fact, we propose in this hypothesis that FLN comprises only the core computational mechanisms of recursion as they appear in narrow syntax and the mappings to the interfaces. If FLN is indeed this restricted, this hypothesis has the interesting effect of nullifying the argument from design, and thus rendering the status of FLN as an adaptation open to question.”
- In fact, recursion supports the argument of design – cultural design (in a nonteleological sense).

What is recursion?

- “An operation that applies to its own output.”

Recursion: Everyone reasons with it

- *Killing the Panther*
- 1. *Xakí, xakí ti kagáihiaí kagi abáipí koái.*
- 'Here the jaguar pounced upon my dog. It died
- 2. *Ti kagáihiaí kagi abáipí koái.*
- 3. *Xaí ti aiá xaiá.*
- 'There the jaguar pounced on my dog. It killed him. It happened with respect to me (summary - recursive).'

Where recursion isn't needed, it isn't used – *it is neither necessary nor sufficient for sentential syntax.*

POTENTIAL EVIDENTIALITY DOMAIN (E.G. P FOCUS D OF RRG)

- (1) The POTENTIAL EVIDENTIALITY DOMAIN of a sentence includes only Nuclei directly licensed by the predicate (i.e. its semantic frame).
- (2) No Nuclei are allowed outside the PED of a containing sentence.

Evidentiality and Potential Evidentiality Domains

- **Evidentiality Domain: The syntactic domain in a sentence which expresses the evidentiality component of the pragmatically structured proposition.**

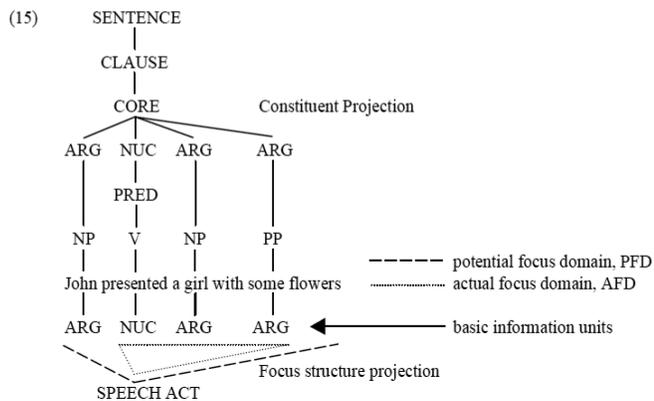
The Evidentiality Domain in Piraha is Co-terminus with the Focus Domain

2.2 The focus structure projection

Within the focus structure projection of RRG, it is the focus domain that is represented. This is achieved by means of demarcating a potential focus domain, the PFD – e.g. for English this is the whole clause; for other languages there may be restrictions as to which part of the clause may potentially constitute the focus. Furthermore, there is an additional demarcation of where the actual focus domain, AFD, occurs with respect to the PFD. It is the AFD which corresponds to the ‘focus domain’ which results from the pragmatic structuring in (10) to (12). This is illustrated in (15) and (16) below for the predicate focus and narrow focus contexts in examples (13) and (14), taken from Van Valin & LaPolla (1997: 215, 216).

(13) John presented a girl with some flowers.

(14) John gave them to her.



(3) a. STATES	
Leon is a fool.	be' (Leon, [fool'])
The window is shattered.	shattered' (window)
Fred is at the house.	be-at' (house, Fred)
John saw the picture.	see' (John, picture)
b. ACTIVITIES	
The children cried.	do' (children, [cry' (children)])
The wheel squeaks.	do' (wheel, [squeak' (wheel)])
Carl ate snails.	do' (Carl, [eat' (Carl, snails)])
c. ACHIEVEMENTS	
The window shattered.	INGR shattered' (window)
The balloon popped.	INGR popped' (balloon)
John glimpsed the picture.	INGR see' (John, picture)
d. ACCOMPLISHMENTS	
The snow melted.	BECOME melted' (snow)
The sky reddened.	BECOME red' (sky)
Mary learned French.	BECOME know' (Mary, French)
e. ACTIVE ACCOMPLISHMENTS	
Carl ate the snail.	do' (Carl, [eat' (Carl, snail)]) & BECOME eaten' (snail)
Paul ran to the store.	do' (Paul, [run' (Paul)]) & BECOME be-at' (store, Paul)

Speech Act

- PED Crucially Depends on the Main Verb as the Core of the Speech Act
- Cf. The man is tall. Is the man tall? Vs. The man who is tall is in the room. *Is the man who tall is in the room?
- By the PED there are no possessors; no embedded predicates – only arguments licensed by the main predicate.

- a noun phrase like “John’s house”, “house” is the nucleus - the semantic core, what this phrase is about. John is the possessor, a type of modifier of the nucleus house - the possessor tells us which house we are talking about. On the other hand, in a larger noun phrase such as “John’s brother’s house”, “house” and “brother” are each a nucleus of a containing phrase. “House” is the nucleus of the phrase “brother’s house” and “brother” is the nucleus of the phrase “John’s brother.” “John” is not a nucleus of any phrase.

Longest Sentence?

- in Piraha:
- **Xahoapíoxio xigihí toioxaag´a hi kabatí xogí xi**
- *Another day man old he tapir big it*
- **mahahái hiigí xiboítópí pi -ohoa ´o hoíhio piiohoaoxio.**
- Slowly cut river -beside larger quantity by
- the river.
- ‘Another day an old man slowly butchered a
- couple of big tapirs, by the side of the water’.

- **Xahoapí oxio xigihí toioxaag´a**
hi kabatí *gixai kapaobaha*
xixiboítopí pi
- “Another day he butchered the tapir that you shot.
- This sentence is ungrammatical because the italicized portion falls outside the PED of **xiboitopi**.

Martins visit

-
- Itaibigai
- Recorded and transcribed by: Steve Sheldon
- Casette 1
-
- [Martins is one of the local regatonistas who comes up the Maici river to trade with the Indians and others. He is notorious for being drunk a great deal of the time, and one time he stopped at the village very very drunk. We encouraged him to stay overnight, as everyone was afraid he would wreck his boat if he continued his journey that night.]

- Isaitaógi ao-gá-xai-saiháai.
- Steve he-say-prog.-restat.
- Batío hi-ahoa-o-ai-sahaí.
- Martins he-night-in-do-NEG,
- Steve said, “Martins must not go at night.”
- (2) Hi-pia-hoí.
- he-drunk-becomes.
- He has become drunk.
- (3) Iápai boitóhoi bāob-í-sahaxaí.
- wood boat hit-stat.-NEG
- He must not (hit) wood (logs) with his boat.

- Hi-aigía-gá-sai. kóxoi ao-aitá-hoí.
- he-rel.-say-restat. Name Braz.-sleep-mov.
- Koxoi then said, “He will sleep.”
- Ao-bagi-aíta-hoi-íi-sog-i-saiháai.
- Steve-customer-sleep-mov.-intent.-desid.-stat-restat.
- Steve wants his customer to sleep.
- (6) Ao-ahoahi-ó ao-hoä-op-í-sog-i-saiháai
- poogáihai.
- Steve-tomorrow-by he-look.for-mot.-stat-desid-stat-restat.
- bananas
- Steve wants to look for bananas tomorrow.
- (7) Isaitaógi hi-büib-i-hiab-íi-haí.
- Steve he-comm.-stat.-neg.-intent.-incompl.
- Steve does not intend to send him away.
- (8) Isaitaógi ao-aigía bagi-aitá-hoi-xíi-haí.

Predictions if Pirahã Lacks Recursion

- (1) the lack of recursion predicts that factive and epistemic verbs will be absent (though there is a - crosslinguistically common - use of the verb 'to see' for 'to know').
- (2) Second, Piraha is predicted to lack a marker of subordination.
- (3) Piraha has no coordinating disjunctive particles (e.g. 'or').
- (4) Piraha has no coordinating conjunctive particle (e.g. 'and'). There is only a more general particle, **píaii**, which may appear preverbal or sentence final and which means 'is thus/simultaneous' (vague meaning), which never works like proper conjunction, but only supplies the information that these two things were simultaneous (it is related to *pixai*, now).

Predictions (cont)

- (5) Piraha has no syntactic complement clauses.
- (6) Piraha does not allow recursive possession anywhere.
- (7) Piraha prohibits multiple modification in the same phrase.
- (8) Piraha semantics shows no scope from one clause into another (e.g. Neg-raising): '*John does not believe you left*' (where 'not' can negate 'believe' or 'left', as in 'It is not the case that John believes that you left' vs. 'It is the case that John believes that you did not leave')

Predictions (final)

- (9) *Piraha* shows no long-distance dependencies except between independent sentences, i.e. discourse:
- (i) a. 'Who do you think John believes __ (that Bill saw __)?'
- b. 'Ann, I think he told me he tried to like ___'
- (ii) **Soxógiái Paóxaisi hi xapaitíisi xaabáítá.**
- **Hi hoísai píaii kosaagá. Hoagá xobáaxáípixái xíga.**
- 'Long ago Dan could not speak Piraha. His children could not either. Nevertheless, (he) speaks it well now.'

How to test a grammar for recursion or other features

- Was a structure generated by a recursive rule or not?
- Chomsky's simplicity principle: Tenenbaum and Perfors's Bayesian evaluation of alternative grammars
- Linguistic distributional arguments.
- Inconclusive:
 - Neuroscience: We cannot look inside the head.
 - Semantics: can't use meanings to argue for morphosyntactic form directly.
 - Intonation: no direct link to syntax.

Corpus Analysis of Piraha Recursion

- http://tedlab.mit.edu/tedlab_website/researchpapers/Piantadosi_et_al_2012_LSA_talk_Piraha.pdf

Universals of Language Vs. Universal Grammar

- Universals of Language vs. Universal Grammar: If there are no universals, then the idea of a 'language faculty' or 'language organ' or UG refer only to a 'capacity'. But, in the absence of essential features (found in all languages), why should such a capacity be considered specifically linguistic? It would be less parsimonious to do so.

Towards A Jamesian Linguistics: The Useful, The Particular, The Experiential

“The generalized conclusion is that therefore the parts of experience hold together from next to next by relations that are themselves parts of experience. The directly apprehended universe needs, in short, no extraneous trans-empirical connective support, but possesses in its own right a concatenated or continuous structure.” William James: *Meaning of Truth*, p. 152

Taxonomies vs. Generalizations: Taxonomic Linguistics Revisited – Linguists directly study only languages, not language.

Studies of culture, subsistence, social structure, and language in other monolingual, hunter-gatherer societies.

Language is a tool

- Tools require both biology and culture for use.