

NEW METHODOLOGIES FOR  
LINGUISTIC FIELDWORK ON  
ENDANGERED LANGUAGES IN BRAZIL

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## INTRODUCTION

- (a) Can we reliably engage in studies of languages that we don't know much, despite the necessity of translation and with the presence of cultural differences?
- (d) Can we apply a common methodology across a variety of indigenous languages?

## GOALS

- It is not straightforward to obtain acceptability judgments from monolingual (or not) speakers without a writing system, relying mostly on uneasy translations.
- Yet it is very much like scientific inquiry elsewhere. In astronomy, observations can be severely clouded by limits on visibility.
- The problems can be largely overcome once known experimental methods are used
- And once we develop digital corpora grammatically tagged.

- I will present a proposal for a tagged digital oral corpus under elaboration at University of Campinas, Linguistics Department
- And I will show the results of experimental linguistics on a native languages of Brazil, Pirahã, that reflects speakers' original intuitions potentially revealing truly universal building blocks of language and cognition.

## TYCHO BRAHE CORPUS

- We propose a platform for digital corpora based on an extension of the POS annotation of the *Tycho Brahe Annotated Corpus of Historical Portuguese* ([www.tycho.iel.unicamp.br/~tycho/corpus](http://www.tycho.iel.unicamp.br/~tycho/corpus))
- We tag both words and morphemes, yielding a two-level annotation.
- The tagging of words is necessary to generate the syntactic parsing that is missing from the current corpora of Brazilian native languages.
- The corpus is built with the collaboration of native speakers of Kadiwéu

- This is a pioneer proposal since it is the first time an American Indian language will be part of a Corpus **allowing grammatical searches that include morphological and syntactic information.**

## TYCHO BRAHE

- <http://www.tycho.iel.unicamp.br:8180/fmk/index>

One of our main goals is to train researchers to build up grammars of endangered languages of South America.

- But we expect also contribution to social welfare:
  - a. grammar knowledge spread/distributed to the local communities
  - b. language/culture preservation
  - c. The indigenous population will have an increased level of awareness and an active role in the (formal/systematic) study of their own language/culture/identity ('language belongs to people') and its popularization
  - d. improved bilingual education (also helps the teaching of/in the official language, access to higher education)



EXPERIMENTAL SYNTAX: A WELL-KNOWN  
QUARELL INVOLVING A BRAZILIAN INDIAN  
LANGUAGE

- <https://www.theguardian.com/technology/2012/mar/25/daniel-everett-human-language-piraha>

## RECURSION IN LANGUAGE

- Direct (conjunctive) Recursion:  $X \rightarrow X$  (and  $X$ )
- It is interpreted as *conjunction* or “and.”
- Everett (2005) calls this elementary form “parataxis,” and claims that all phrases in Pirahã are interpreted in this straightforward way

## INDIRECT RECURSION

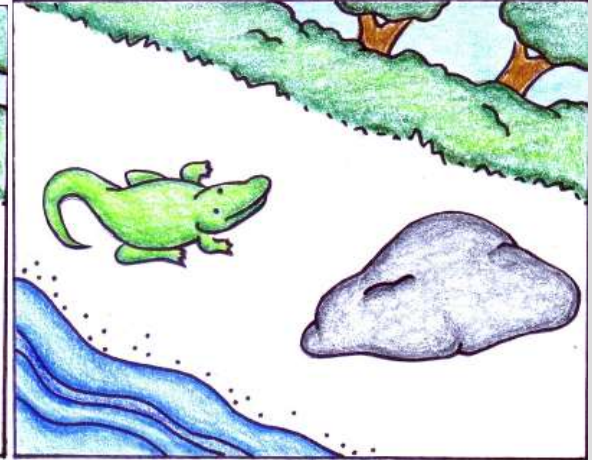
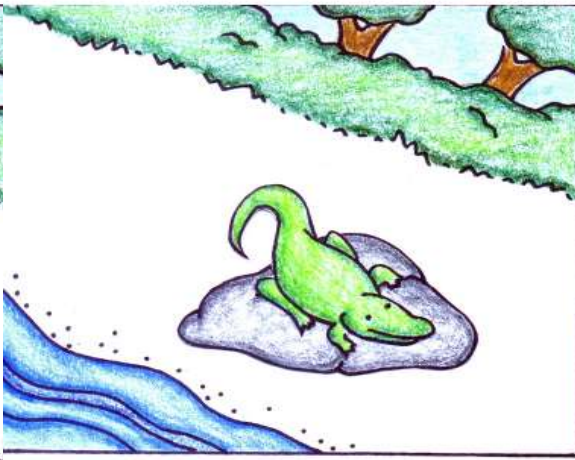
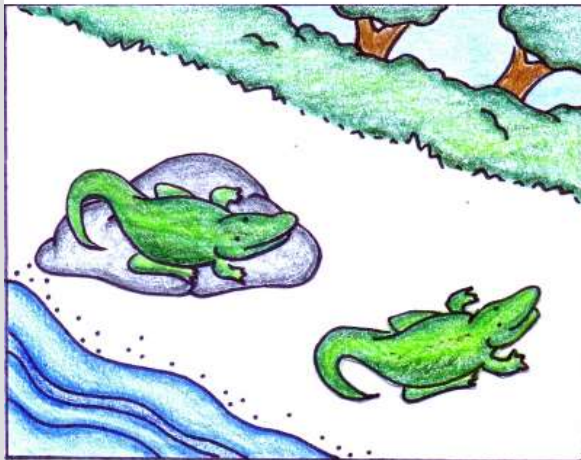
- $\text{DP} \rightarrow \text{D NP}$   $\text{NP} \rightarrow \text{N PP}$   $\text{PP} \rightarrow \text{P DP}$
- This can produce forms like (I) (marking the maximal projections: DP, NP, PP):
- (I) a. The jar on the shelf in the closet in the kitchen  
    b. [DP the [NP jar [PP on [DP the [NP shelf [PP in [DP the [NP closet [PP in [DP the [NP kitchen]]]]]]]]]]]

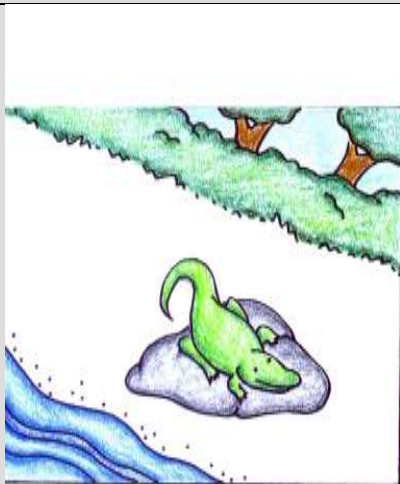
## NATURALIST DATA FROM PIRAHÃ

kapiiga ko    kapiigatoi xihi-aip-aáti                      kapiiga ko kapiiga  
*paper   inside pencil    store-downward-unexpectedly paper inside paper*

ho-áop-aáti  
*AUX-impefective-unexpectedly*

‘You are putting down pencil inside paper inside paper’

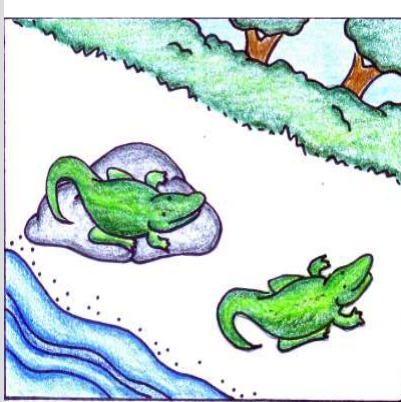




- (14) koxoahai bege apo xaxai apo  
*alligator floor on stone on*  
'Alligator on the stone on the floor'



- (15) koxoahai bege apo xaxai apo tahoasi apo  
*alligator floor on stone on mat on*  
'Alligator on the mat on the stone on the floor'



- (14') koxoahai bege apo xaxai apo piai  
*alligator floor on stone on also*  
 'Alligator on the floor (and) on the stone also'



- (15') koxoahai bege apo xaxai apo (piai) tahoasi apo piai  
*alligator floor on stone on also mat on also*  
 'Alligator on the floor, on the stone, (and) on the mat also'

These results clearly show that Pirahã speakers are capable of teasing coordination and recursion apart. It suggests that the target sentences, (14) and (15), might not even be ambiguous. If they are, however, the results presented here indicate that: (a) a recursive structure is available for these sentences; (b) speakers have a preference for treating (14) and (15) as containing recursive PPs; and (c) the ambiguity is resolved by inserting an overt coordination, reinforcing, a coordinative reading.



## SECOND PART



ihiaipati gigohoi kapiiga apo tiapapati apo (pia) tabo apo pia  
*put coin paper on chair on (also) board on also*

ihiaipati gigohoi kapiiga apo tiapapati apo tabo apo  
*put coin paper on chair on board on*

1. Sandalo, F. , Rodrigues, C., Roeper, T., Amaral, L., & Maia, M. A Pilot study on Pirahã Prepositional Phrases

