## A LANGUAGE ALONE: A STUDY OF THE PIRAHA LOUISA IMELIO

#### INTRODUCTION

There has long been a relationship between culture and language, with each influencing the other in some way. While individual cultures and languages may differ, it was understood that there are some universal traits present in all languages. These common traits included an imbedded grammar and a system of counting. The language of the Piraha, an indigenous community located within the Amazon Jungle of Brazil, is a start exception to these rules. The Piraha have no numerical system or method for tallying and they also lack "recursion," Noam Chompsky's theory for a universal imbedded grammar. In order to understand how this language could develop without these two common traits, their cultural values and traditions must be examined. This study will demonstrate how language is influenced by culture, and how the Piraha language is effective within its cultural context.

# METHODS **Participants**

The participants in the study are the Piraha, an indigenous community in the Brazilian jungle. Daniel Everett, a linguistic anthropologist, has lived with the Piraha for many years, and his subjects, or informants, are members of the village with which he will have daily conversations in order to understand their vocabulary and language structure. His direct informants are mostly adult members of the community, but he does observe the activities and behaviors of the children. Informants are chosen on a voluntary basis, and are free to end their role in the study at any time.

#### Materials

- Ethnographic works
- Primary sources such as interviews, stories, and other articles
- Corpus collection showing sentence and grammatical structure

#### Design

The design of the study will follow an ethnographic approach. While a comparative approach could also be effective, the need to have a holistic understanding of the Piraha culture and its relationship to the language calls for an ethnographic study. It is also important that the Piraha be understood within their own cultural context, as opposed to understanding them in comparison to another culture or speech community.

#### Procedure

The direct research portion of this study will have already taken place. The research will be conducted in the following manner

- Searches will be conducted in databases such as Anthrosource, Ebscohost, ANTHROplus, and Academic Search Premier. Keywords such as "recursion," "Piraha language," "cultural determinism," "embedded grammar," and "universal language traits" will be used in order to collect sources.
- 2. Sources provide examples of Piraha language including interviews and stories which formed a corpus in which the language can be broken down and examined.
- 3. Sentence structure will be compared to those of other languages to establish the presence or absence of an imbedded grammar, or "recursion."
- 4. Cultural values and practices will be examined to find a connection or reasoning for lack of recursion or system of counting. How does the Piraha's daily life result in the lack of these "universal" language traits?

### **EXPECTED RESULTS**

- Lack of counting system is a result of their cultural values and practices. The Piraha tend to live in the moment, eating when they have food without keeping left overs and creating tools when they need them but then immediately discarding them as opposed to keeping them for later. These practices do not demonstrate a tendency to plan ahead, which adheres to their "in the moment" cultural values (Everett, 2008).
- While recursion is not heavily present in the Piraha language, it is not truly absent. If the Piraha were to use no imbedded grammar of any kind their sentences would be no longer than a few words (Futrell et al, 201t6). Their sentence structure does tend to be less complex and usually communicate whatever information is vital to their immediate, present situation. This could also be influenced by their tendency to be ever-present.

#### SIGNIFICANCE

These findings show a significant relationship between language and culture. The Piraha demonstrate that these common traits which might have been previously considered universal are not present in all languages. What makes Piraha interesting and unique is that not only is it possible to communicate despite the lack of these traits, but cultural values, traditions, and context indicate that this language is more efficient without the presence of these traits.

#### REFERENCES

Bender Andrea, Sieghard Beller. 2012. "Nature and culture of finger counting: Diversity and representational effects of an embodied cognitive tool." *Cognition*. Volume 124, Issue 2, Pages 156-182. https://doi.org/10.1016/j.cognition.2012.05.005.

Everett, D. L. (2008). *Don't sleep, there are snakes: Life and language in the Amazonian jungle*. New York: Vintage Books.

Futrell R, Stearns L, Everett DL, Piantadosi ST, Gibson E (2016) A Corpus Investigation of Syntactic Embedding in Pirahã. PLOS ONE 11(3): e0145289. https://doi.org/10.1371/journal.pone.0145289 Gordon, Peter. 2004. "Numerical Cognition Without Words: Evidence from Amazonia." *Science*. Vol 306. Issue 5695. PP 469-499.

Paap, K., & Partridge, D. (2014). Recursion Isn't Necessary for Human Language Processing: NEAR (Non-iterative Explicit Alternatives Rule) Grammars are Superior. *Minds & Machines*, 24(4), 389–414. https://doi-org.libproxy.csustan.edu/10.1007/s11023-014-9341-y

#### ACKNOWLEDGEMENTS

Dr. Sari Miller-Antonio, California State University Stanislaus Department of Anthropology

Dr. James Todd, California State University Stanislaus Department of Anthropology