

Implicit prosody in attribute attachment in Brazilian Portuguese

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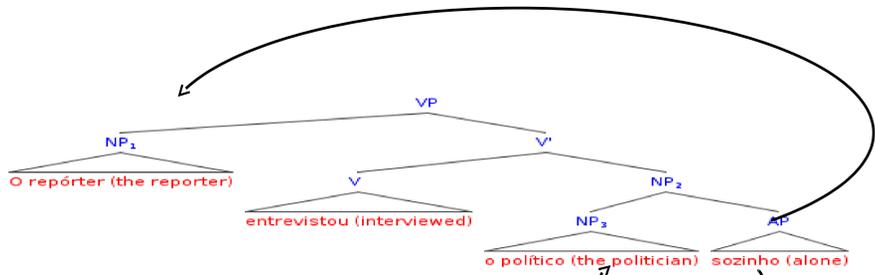
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Introduction

- In Brazilian Portuguese (BP), “NP1 – V – NP2 – attribute” sentences might have two interpretations.

High attachment



Low attachment

- Long sentences are more likely to present high attachment than short ones. The Implicit Prosody Hypothesis argues that this is because speakers implicitly apply overt prosody to their silent readings [1].

- In this study, we analyzed

- 1) **Short sentences** which were taken from [2]:

O repórter entrevistou o político sozinho

The reporter interviewed the politician alone.

- 2) **Long sentences** which were designed for this research:

O repórter entrevistou o político claramente desolado e sozinho.

The reporter interviewed the politician clearly desolated and alone.

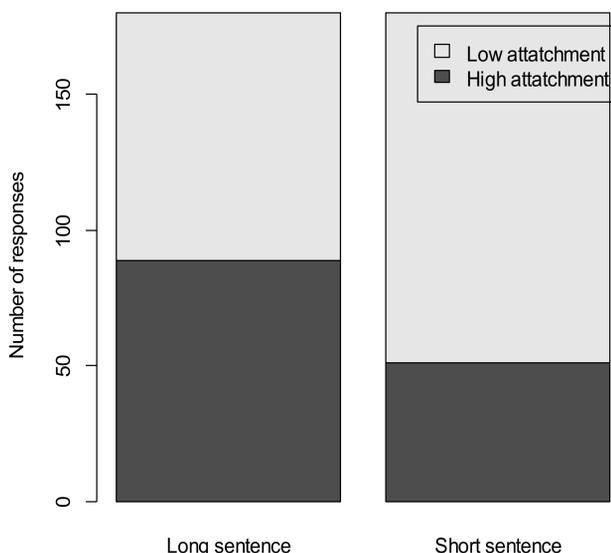
Experiment 1 - questionnaire

- Subjects were presented with a series of **short** and **long** sentences. After each sentence they were asked a question with the following pattern: Who was (attribute)? – e.g. Who was alone?

Number of subjects	30
Questionnaire 1	15
Questionnaire 2	15

- Two questionnaires were created and presented to the participants. The same subject was not submitted to the same tests.
- Each questionnaire, distributed online through a Google form, contained 48 sentences (12 target sentences + 24 fillers).

Attachment per length of sentence AP



$\chi^2 = 16.0013(1), p < 0.001$

- The results of the questionnaire indicate that length seems to play a role in attachment. We suggest this is due the fact the speakers tend to implicitly apply their prosodic patterns into silent reading.

Experiment 2 - production

- In order to understand the nature of the prosodic patterns of our sentences, we recorded 4 subjects who did not take part in the questionnaire. They read 12 sentences of the questionnaire in the following conditions.

(1) High attachment, long sentence: *Só havia um repórter no local. O repórter entrevistou o político claramente desolado e sozinho.* (There was only one reporter there. The reporter interviewed the politician clearly desolated and alone.)

(2) Low attachment, long sentence: *Só havia um político no local. O repórter entrevistou o político claramente desolado e sozinho.* (There was only one politician there. The reporter interviewed the politician clearly desolated and alone.)

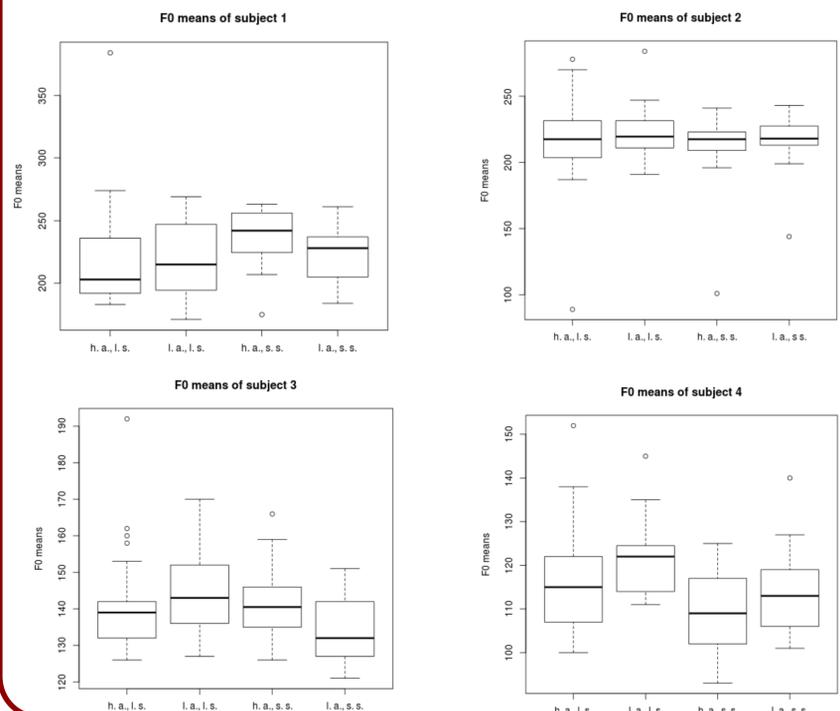
(3) High attachment, short sentence: *Só havia um repórter no local. O repórter entrevistou o político sozinho.* (There was only one reporter there. The reporter interviewed the politician alone.)

(4) Low attachment, short sentence: *Só havia um político no local. O repórter entrevistou o político sozinho.* (There was only one politician there. The reporter interviewed the politician alone.)

- Prosodic boundary is usually marked with high boundary tones, pre-boundary syllable duration and pauses [3, 4]. We measured pauses and F0 means of the last syllable of the ambiguous nouns.

- We found 41 pauses (mean=142.35 milliseconds, s.d.=96.6), which are distributed as the following table shows:

	Long sentence	Short sentence	Total
High attachment	21	2	22
Low attachment	18	0	18
Total	39	2	



Conclusion

- Contributions of this study to previous ones by analyzing long sentences (Magalhães & Maia, 2006).
- Long sentences are more likely to present high attachment than short ones.
- Pauses in long sentences seem to indicate prosodic boundaries.
- F0 patterns are yet to be more thoroughly analyzed, although for long sentences in low attachment there is an increase of F0 in relation to long sentences in high attachment.

References

- [1] Fodor, J. D. Prosodic disambiguation in silent reading. 2002. In: *Proceedings of North East Linguistic Society*. 32. Hirotani, M (ed.). GLSA, University of Massachusetts, Amherst, MA, 113-132. / [2] Magalhães, J. O. Maia, M. 2006. Pistas prosódicas implícitas na resolução de ambigüidades sintáticas: um caso de adjunção de atributos (Implicit prosodic clues in the resolution of syntactic ambiguities: a case of attribute adjunctions). *Revista da ABRALIN*, v. 5, n. 1-2, 143-167. / [3] D'Imperio, M. G., Elordieta, S. Frota, S. O., Prieto, M., Vigário, M. 2005. Intonational phrasing in Romance: the role of syntactic and prosodic structure. In: *Prosodies*. Berlin: Mouton de Gruyter, 59-97. / [4] Frota, S. Vigário, M. 2007. Intonational phrasing in two varieties of European Portuguese. In: Riad, T. Gussenhoven, C. (eds.) *Tones and Tunes*, v. 1. Berlin: Mouton de Gruyter, 265-291