

Partial and Consistent Null Subject Languages: a sentence comprehension study in European and Brazilian Portuguese

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1. Background

1.1. Anaphoric expressions resolution

- The choice of an antecedent for an anaphoric expression is based on the prominence of the available entities: the more salient an antecedent is in the discourse the less marked and informative will be the anaphoric expression referring to it (Ariel, 1996)
- There is disagreement on what determines prominence ascription:
 - Syntactic function or subjecthood
 - Anaphoric expressions like null pronouns (NullP) are preferred to retrieve the sentential subject, the most prominent entity, as antecedent while overt pronouns (OverTP) are preferred to retrieve objects, less prominent entities (Costa, Faria & Matos, 1998, and Costa, Faria & Kail, 2004, for European Portuguese; Corrêa, 1998, and Melo & Maia, 2005, for Brazilian Portuguese; Carminatti, 2002, for Italian; Alonso-Ovalle et al., 2002, for Spanish; among others)
 - Order of mention or structural position
 - First-mentioned entities are very prominent, regardless of their syntactic status, and are remembered faster than second-mentioned ones (Gernsbacher & Hargreaves, 1988, for English; Carreiras, Gernsbacher & Villas, 1995, for Spanish)

1.2. Null Subject Languages

- Null Subject Language (NSL): languages that allow the omission of the subject of a finite sentence, like Italian, Spanish and Portuguese, for example
- Non-NSL: languages that do not allow subject omission in finite sentences, like English or French, for instance
- However, the former group is not homogenous and may be divided in, at least, three different classes, following Barbosa (2011):
 - Consistent NSL: e.g. European Portuguese (EP), Italian
 - Partial NSL: e.g. Brazilian Portuguese (BP), Hebrew
 - Discourse pro-drop language: e.g. Chinese, Japanese
- Comprehension studies:
 - Meridor (2006): in Hebrew, a partial NSL, in intra-sentential contexts there is no preferred antecedent for the OverTP. OverTP may have a similar behavior to NullP since NullP is not allowed in all circumstances
 - Filiaci (2010): in Spanish, a consistent NSL, when compared with Italian, there is also no preferred antecedent. Spanish OverTP is a weak pronoun, so, closer to the NullP in Ariel's scale

1.3. European and Brazilian Portuguese

- BP has gone through a change on its pronominal system and consequently through a weakening of the verbal inflection paradigm (for instance, Figueiredo Silva, 1996)
- Corpora analysis studies comparing EP and BP (for instance, Barbosa, Duarte & Kato, 2005; Duarte, 1995) have concluded that the verbal inflection weakening has led to a decrease, in BP, of the use of NullP and a preference for the use of the OverTP instead. According to Duarte (1995), BP lacks the Avoid Pronoun Principle
 - O João_i disse que [-]_i EP/BP/ele_i EP/comprou um computador.*
'John said that he thought a computer.'
- However, this difference between EP and BP is mainly based on theoretical linguistic descriptions and on corpora data analysis
- Actually, language processing studies (Corrêa, 1998; Melo & Maia, 2005) have shown that BP has a similar behavior to other NSL: NullP is preferred to retrieve the subject of a previous sentence and the OverTP is preferred to refer to the object
- But no study has yet compared directly the preferences of native speakers of EP and BP during pronoun resolution

2. Present Study

2.1. Aims

- To analyze the preferences of NullP and OverTP interpretation in intra-sentential contexts, particularly to distinguish the effect of syntactic function and structural position on prominence ascription
- To compare cross variant differences between EP and BP in pronoun interpretation preferences, particularly to analyze if there are differences in antecedent retrieval depending on the type of the anaphoric expression used

2.2. Methodology

Participants

- 24 EP native-speakers, University of Lisbon
- 24 BP native-speakers, Federal University of Rio de Janeiro

Stimuli

- 20 experimental items in 4 conditions + 40 fillers

Main clause SVO order + null/overt pronoun (SVO+null/overt)

O mecânico_{SUB} trabalhou com o engenheiro_{OBL} na oficina quando [-]/ele remodelou o carro de competição.
The mechanic_{SUB} worked with the engineer_{OBL} in the garage when [he]/he remodeled the competition car.

Main clause OVS order + null/overt pronoun (OVS+null/overt)

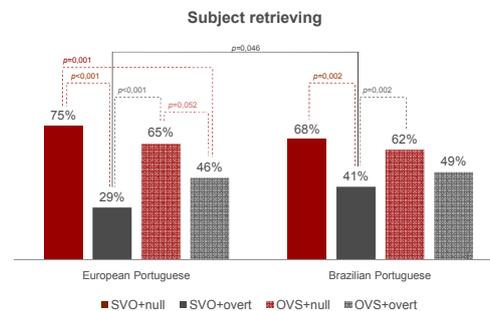
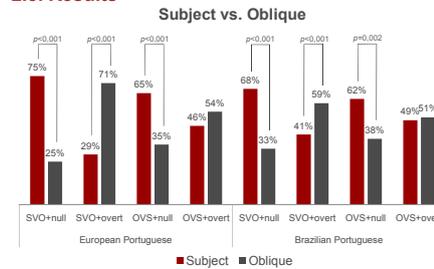
Com o engenheiro_{OBL} trabalhou o mecânico_{SUB} na oficina quando [-]/ele remodelou o carro de competição.
With the engineer_{OBL} worked the mechanic_{SUB} in the garage when [he]/he remodeled the competition car.

Task

- Off-line questionnaire. Participants had to signal, on the questionnaire sheet, the answer for a question like:

Quem arranjou o carro? - o engenheiro - o mecânico
Who remodeled the car? - the engineer - the mechanic

2.3. Results



2.4. Discussion

- When comparing the preference to interpret the NullP or the OverTP as coreferential with the subject or the oblique of the previous sentence in each condition, EP and BP have very similar results:
 - NullP is always interpreted as referring to the subject of the previous sentence, whether it is the first-mentioned entity (in pre-verbal position) or the second-mentioned one (in post-verbal position)
 - OverTP is generally interpreted as referring to the oblique antecedent
 - However, this preference is only statistically significant when the oblique is not Topicalized
- When comparing only subject retrieving in each variety and between varieties
 - In EP
 - Conditions with NullP are statistically different from conditions with OverTP, reinforcing the results that show that NullP is preferred to retrieve the subject and OverTP the oblique
 - In BP
 - Only SVO+overt is statistically different from NullP conditions. OVS+overt is not different from any condition
 - Comparing EP and BP
 - There are no differences in NullP conditions
 - In OverTP conditions, the preference to interpret the pronoun as coreferential with the subject is higher in BP than in EP, however this difference is only statistically significant when the OverTP retrieves the subject on its canonical structural position (29%, in EP, vs. 41% in BP) not when it is in a post-verbal position (46%, in EP, and 49%, in BP)

3. Conclusions

Syntactic function vs. Structural position

- Subjecthood seems to be the most important linguistic information on saliency ascription in intra-sentential contexts and, at least, at later stages of language processing (see Luegi, Maia & Costa (2011) for on-line results)
 - The most prominent antecedent in both varieties of Portuguese is the subject of the preceding sentence, moreover, and though not statistically significant, the pre-verbal subject
 - There is a slight decrease of subject interpretations with the NullP pronoun when the subject is not in its canonical position (10% less in EP and 6% less in BP)
- Despite the prominence of Subjecthood, structural position (or order of mention) does play a small role in OverTP conditions, which may indicate, as Mayol (2010) proposes, that NullP and OverTP are sensitive to different types of information, mainly syntactic, the former, and syntactic and pragmatic the later
 - There is a slight decrease of oblique preference from canonical to non-canonical conditions with OverTP (SVO+overt and OVS+overt): 17% less in EP and 8% less in BP*

*This small difference between SVO and OVS condition is explained by the fact that in SVO+overt the preference to interpret the OverTP as retrieving the oblique is already very low, when comparing with EP

European Portuguese vs. Brazilian Portuguese

- Results confirm that both EP and BP speakers prefer to interpret the null subject in intra-sentential contexts as coreferential with the subject of the previous sentence and also its (nearest) c-commanding antecedent (Barbosa, Duarte & Kato, 2005). Actually, some authors (for instance, Holmberg, 2010) defend that in BP null subjects are only legitimated by antecedents that c-command them, which is what happens in all our experimental conditions
- Results also confirm the loss of the Avoid Pronoun Principle in BP (Duarte, 1995): in BP, null and overt pronouns are not anymore in a complementary distribution, as in Hebrew (Meridor, 2006)
- Our results do not allow the confirmation of the hypothesis that null subjects in EP and BP are different syntactic categories (Barbosa, 2011) but may feed the discussion about the type of overt pronouns that exist in each variety. Differences between EP and BP in OverTP conditions may indicate that, in BP, as in Spanish (Filiaci, 2010), OverTP referential value may be weakened (Kato, 1999)

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