Prosodic Phrasing in parentheticals and topics across varieties of European Portuguese

Nádia Barros & Sónia Frota

Universidade de Lisboa

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1. INTRODUCTION


- Within the InAPoP – Interactive Atlas of the Prosody of Portuguese project (PTDC/CLE-LIN/119787/2010, funded by FCT) http://labfon.letras.ulisboa.pt/InAPoP/

- Verify to which extent the analyses proposed in previous studies (Frota 2000, 2014; Vigário & Frota 2003; Frota & Vigário 2007; Cruz 2013) can be extended to other (unstudied) varieties of European Portuguese: Porto (Por) in the North, and Évora (Eva) in the South
1. INTRODUCTION

- Hypotheses:
  
  (i) there is no variation in intonational phrasing for these utterances → parentheticals and topics should form independent IPs, similarly to what has been described for other varieties of EP and for other languages

  (ii) there is variation in the prosodic phrasing for these utterances → constituent length effects and boundary marking strategies in these varieties may differ
2. BACKGROUND


- Standard variety (SEP) – *(SVO)/(S)(VO)* [nr. of syllables]
- Braga (NEP) – *(S)(VO)* [syntactic complexity]
- Castro Verde (Ale) – *(S)(VO)* [nr. of syllables]
- Albufeira (Alg) – *(SVO)* [syntactic/prosodic branchingness]
- Preliminary studies reveal an *(S)(VO)* tendency in Porto (Por), Braga (Bra), Castelo Branco (CtB), Coimbra (Cob) and Évora (Eva)
2.2. The constructions under analysis

- Parentheticals and topics form prosodic domains of their own (Frota 2000, 2014; Nespor & Vogel 2007)

- Utterance with inner parenthetical = 3 IPs (L*+H H% L*+H H% H+L* L%, cf. Frota 2000, 2014)

- Initial topics: L*+H H% H+L* L%, H+L* L% H+L* L%

- Final topics: H+L* H/L%, H+L* L%

- Sandhi blocked between IP boundaries -> formation of independent IPs OR occurrence of sandhi between the parenthetical and one of the constituents to its right or left (constituent length) -> compound IP (Ladd 2008; Frota 2000, 2014)
3. METHODOLOGY

- Data collection: two urban points of Porto (Por, Northern variety) and Évora (Eva, Central-Southern variety)

- Materials:
  - 16 Subject/Parenthetical/Verb + Object utterances
    
    As alunas, *até onde sabemos*, obtiveram boas avaliações. (the students, as far as we know, have got good marks)

  - 5 utterances with topics (2 in situ, 2 left dislocated topics and 1 right dislocated topic):

    - *Aos jornalistas, as angolanas ofereceram especiarias.* (To the journalists, the Angolan girls offered spices) - left dislocated topic

- Constituent length conditions: short constituents (< 5 syll.) vs. long constituents (≥ 5 syll.) (cf. Elordieta, Frota & Vigário 2005)

  - O músico *(short)*, após o conflito *(long)*, abandonou a sala (long). (the musician, after the conflict, left the room)

- Total of 252 utterances for analysed
3. METHODOLOGY

- Annotation of sandhi phenomena, intonational contours, pitch range variation

- Annotated in *Praat* (Boersma & Weenink 2013):
  1. Intonation (cf. P_ToBI (Frota 2014, Frota et al. 2015): phonological annotation of nuclear accents and boundary tones
  2. Orthography: word by word orthographic transcription
  3. Phrasing: prosodic boundaries annotated (using P_ToBI - 0 = CL, 1 = PW, 2 = PWG, 3 = PhP and 4 = IP)

![Textgrid annotation.](image)

*Figure 1.* Textgrid annotation.

“O músico, após a audição, saltou para a plateia.” (The musician, after the audition, jumped into the audience.), produced by a speaker from Porto.
4. RESULTS

4.1. Parentheticals

![Figure 2. Percentage of occurrence of L*(+H) H% L*(+H) H% (H+)L* L%, and the most frequent alternative contour, in Por and Eva.](chart)

- Most frequent intonational contour: L*(+H) H% L*(+H) H% (H+)L* L%
4. RESULTS

4.1. Parentheticals

Figure 3. Intonational contour of “O músico, após a audição, saltou para a plateia.” (The musician, after the audition, jumped into the audience.), produced by a speaker from Por.

Figure 4. Intonational contour of “O galã, ameaçado pelo rival, revelou a sua identidade” (The hero, threatened by the rival, revealed his identity.), produced by a speaker from Eva.
4. RESULTS

4.1. Parentheticals: Pitch range by constituent length >> Variation in local pitch range was found across varieties

<table>
<thead>
<tr>
<th>Porto (Por)</th>
<th>1st IP</th>
<th>Parenthetical</th>
<th>3rd IP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long/Long/Long</td>
<td>52.31</td>
<td>45.26</td>
<td>41.62</td>
</tr>
<tr>
<td>Short/Long/Long</td>
<td>60.48</td>
<td>47.25</td>
<td>52.80</td>
</tr>
<tr>
<td>Short/Short/Long</td>
<td>48.41</td>
<td>42.34</td>
<td>54.42</td>
</tr>
</tbody>
</table>

Table 1. Mean values of F0 local pitch range at IP boundaries (Hz), by constituent, in parentheticals (Por).

<table>
<thead>
<tr>
<th>Évora (Eva)</th>
<th>1st IP</th>
<th>Parenthetical</th>
<th>3rd IP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long/Long/Long</td>
<td>41.63</td>
<td>39.75</td>
<td>34.59</td>
</tr>
<tr>
<td>Short/Long/Long</td>
<td>47.63</td>
<td>38.42</td>
<td>46.26</td>
</tr>
<tr>
<td>Short/Short/Long</td>
<td>55.03</td>
<td>29.96</td>
<td>36.61</td>
</tr>
</tbody>
</table>

Table 2. Mean values of F0 local pitch range at IP boundaries (Hz), by constituent, in parentheticals (Eva).

- Short/Long/Long do not show lower pitch range than Long/Long/Long, in Porto and Évora (≠ SEP)
- Short parenthetical, in Évora, shows lower values → compound domain with the following IP (= SEP)
4. RESULTS

4.1. Parentheticals: Variation in sandhi patterns across varieties

Sandhi blocked between IPs

Figure 5. Blocking of segmental phenomena at IP boundaries, in utterances with parentheticals (Por).

Figure 6. Blocking of segmental phenomena at IP boundaries, in utterances with parentheticals (Eva).

- Sandhi occurs in the 2nd IP in Eva (confirms the tendency to compound domain formation)
4. RESULTS

4.1. Parentheticals: Summary

- 3 IPs, defined by the same contour $L^* (+H) H\% L^* (+H) H\% (H+)L^*$ $L\%$, similarly to SEP

- Variation in local pitch range & sandhi patterns:
  - Suggests phrasing differences across varieties (short parentheticals, in Évora but not in Porto, tend to form a compound domain with the following IP)

- Constituent length effect in IP phrasing in Évora
4. Results

4.2. Topics

<table>
<thead>
<tr>
<th></th>
<th>POR</th>
<th>EVA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long_T in situ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>initial/Long_const.</td>
<td>(H+)L* H% (H+)L* L%</td>
<td>85.71</td>
</tr>
<tr>
<td>Long_const./Long_T in situ final</td>
<td>L*(+H) H% (H+)L* L%</td>
<td>66.67</td>
</tr>
<tr>
<td>Short_T left dislocated/Long_const.</td>
<td>L*(+H) H% (H+)L* L%</td>
<td>66.67</td>
</tr>
<tr>
<td>Long_T left dislocated/Long_const.</td>
<td>L*(+H) H% (H+)L* L%</td>
<td>66.66</td>
</tr>
<tr>
<td>Long_const./Long_T right dislocated</td>
<td>L* L% (H+)L* L%</td>
<td>66.66</td>
</tr>
</tbody>
</table>

Table 3. Percentage of realization of the most frequent intonational contour in topics (Por and Eva).

Contours vary depending on the position of the topic and the region.
4. RESULTS

4.2. Topics

**Figure 7.** Intonational contour of “Aos jornalistas, as angolanas ofereceram especiarias.” (To the journalists, the Angolan girls offered spices.), produced by a speaker from Por (long left dislocated topic).

**Figure 8.** Intonational contour of “Aos jornalistas, as angolanas ofereceram especiarias.” (To the journalists, the Angolan girls offered spices.), produced by a speaker from Eva (long left dislocated topic).
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4. RESULTS

4.2. Topics: Variation in local pitch range was found across varieties

<table>
<thead>
<tr>
<th></th>
<th>1º IP</th>
<th>2º IP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long_T in situ initial/Long_const.</td>
<td>88.20</td>
<td>48.63</td>
</tr>
<tr>
<td>Long_const./Long_T in situ final</td>
<td>30.13</td>
<td>80.08</td>
</tr>
<tr>
<td><strong>Short_T left dislocated topic/Long_const.</strong></td>
<td><strong>65.45</strong></td>
<td><strong>48.93</strong></td>
</tr>
<tr>
<td>Long_T left dislocated topic/Long_const.</td>
<td>80.55</td>
<td>61.28</td>
</tr>
<tr>
<td>Long_const./Long_T right dislocated topic</td>
<td>50.80</td>
<td>36.12</td>
</tr>
</tbody>
</table>

Table 4. Mean values of F0 local pitch range at IP boundaries (Hz), in topic phrases (Por).

<table>
<thead>
<tr>
<th></th>
<th>1º IP</th>
<th>2º IP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long_T in situ inicial/Long_const.</td>
<td>77.42</td>
<td>60.77</td>
</tr>
<tr>
<td>Long_const./Long_T in situ final</td>
<td>36.79</td>
<td>43.27</td>
</tr>
<tr>
<td><strong>Short_T deslocado à esquerda/Long_const.</strong></td>
<td><strong>28.23</strong></td>
<td><strong>61.17</strong></td>
</tr>
<tr>
<td>Long_T deslocado à esquerda/Long_const.</td>
<td>48.32</td>
<td>61.79</td>
</tr>
<tr>
<td>Long_const./Long_T deslocado à direita</td>
<td>42.17</td>
<td>56.63</td>
</tr>
</tbody>
</table>

Table 5. Mean values of F0 local pitch range at IP boundaries (Hz), in topic phrases (Eva).

Short left dislocated topic with lower values than long topic, especially in Eva (short IPs form compound IPs, in this region)
4. RESULTS


4.2. Topics: Variation in sandhi patterns across varieties

- Sandhi occurs

![Figure 9](image9.png) Blocking of fricative voicing ([ʃ]) at the inner IP boundary, in topic phrases (Por).

![Figure 10](image10.png) Blocking of fricative voicing ([ʃ]) at the inner IP boundary, in topic phrases (Eva).

- In Évora sandhi occurrence is higher ➔ tendency to form compound IPs
4. RESULTS

4.2. Topics: Summary

- Topic phrases form **2 IPs**, similarly to other varieties of EP (SEP, Ale and Alg).

- Évora and Porto present **similar contours**, although with some specificities (long left dislocated topic shows the contour L*(+H) H% (H+)L* L%, in Porto, and L+H* H% (H+)L* L%, in Évora).

- **Variation in local pitch range & sandhi patterns:**
  - Short topic in Évora shows lower pitch range variation values than long topic → compound domain formation.

- **Constituent length effect** in IP phrasing in Évora (compound IP phrasing in Évora, but not in Porto).
5. SUMMARY AND DISCUSSION

**Porto (North)**
- Intonational contour of utterances with parentheticals is similar to SEP
- Long left dislocated topic: $L^*(+H) H\% (H+)L^* L\%$
- Sandhi is blocked at IP boundaries
- Pitch range variation values in short parenthetical close to the values for long parenthetical
- More pause insertion
- Non formation of compound IPs

**Évora (South)**
- Intonational contour of utterances with parentheticals is similar to SEP
- Long left dislocated topic: $L+H^* H\% (H+)L^* L\%$
- Sandhi occurs at IP boundaries (compound IPs)
- Lower pitch range variation values in short parenthetical
- Less pause insertion
- Formation of compound IPs (= SEP and Central-Southern varieties)
5. SUMMARY AND DISCUSSION

(i) There is no variation in intonational prosodic phrasing for utterances with parentheticals or topics

✓ parentheticals and topics form independent IPs across varieties

(ii) There is variation in prosodic phrasing for these utterances

✓ Prosodic phrasing may vary in relation to:

• **Constituent length effects** → SEP and Central-Southern varieties = more sensitive to constituent length → compound IP formation in Central-Southern varieties; Porto and NEP = less sensitive to length effects

• Different boundary marking strategies (e.g., pitch range, pauses)
6. FUTURE WORK:

- Different phonetic cues to mark IP boundaries, such as pre-boundary lengthening
- Consider factors such as speech rate
- Phrasing in SVO structures with variation in constituent length (cf. Elordieta, Frota & Vigário 2005 e Frota & Vigário 2007)
- Other regions
  - Different discursive styles (cf. Mata et al. 2014)
  - Different age groups (InAPoP project)

- Caracterization of prosodic phrasing patterns in non studied varieties of EP, using intonational and durational cues, and segmental phenomena
- Determine the extent of prosodic phrasing variation EP.
AKNOWLEDGMENTS

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❖ To all speakers from the varieties considered here
❖ To all the people and institutions who provided facilities during data collection
❖ To the InAPoP team
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References


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