Prosodic Phrasing in parentheticals and topics across varieties of European Portuguese

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ABSTRACT

This study focuses on the prosodic phrasing and intonation of utterances with parentheticals and topics in two previously unstudied varieties of European Portuguese (EP) - Porto and Évora. Our findings are compared to previous descriptions for the standard variety (SEP), and two Central-Southern varieties. The results indicate that there is no variation in EP in the prosodic phrasing of these utterances, as both parentheticals and topics form independent Intonational Phrases (IP) in all varieties. However, variation was found across varieties in the effect of constituent length on phrasing, and in strategies used to mark prosodic boundaries. Some varieties exhibit a higher sensitivity to constituent length, thus promoting the formation of compound IPs (SEP, Central-Southern varieties), than others (Northern varieties). These results, together with the fact that the IP was consistently found to be the domain for sandhi phenomena, further support the critical role of the IP in EP prosodic phonology.

Keywords: phrasing, intonation, parentheticals, topics, prosodic variation.

1. INTRODUCTION

Studies on prosodic variation in European Portuguese (EP) are relatively recent. Across languages in general, and also in Portuguese, parentheticals and topics are phonologically and syntactically described as independent from the root sentence [1, 4, 7, 9, 10, 12, 15, 17, 18]. They are, thus, useful constructions for the study of intonational phrasing across languages and language varieties. Building up on previous studies [5, 6, 10, 12, 14, 21], parentheticals and topics are analysed in two unstudied varieties of EP. The following hypotheses are put forward: (i) there is no variation in intonational phrasing for these utterances, since 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, as constituent length effects and boundary marking strategies in these varieties may differ. Thus, our goal is to examine to which extent the analysis proposed in previous studies [5, 10, 12, 14, 21] can be extended to other varieties and what is the extent of the variation found in the phonology and in the phonetics of intonational phrasing across EP varieties.

2. METHODOLOGY

The current study is part of the *InAPoP* project - Interactive Atlas of the Prosody of Portuguese (http://labfon.letras.ulisboa.pt/InAPoP/). Data were collected *in loco*, in the two urban points of Porto (Por, Northern variety) and Évora (Eva, Central-Southern variety). 16 utterances with internal parentheticals, i.e., with the order Subject/Parenthetical/Verb + Object and 5 utterances with topics (2 *in situ*, 2 left dislocated topics and 1 right dislocated topic) were used (see respectively (1) and (2-3)).

(1) As alunas, *até onde sabemos*, obtiveram boas avaliações. (The students, *as far as we know*, have got good marks.) – parenthetical;
(2) *As angolanas*, ofereceram especiarias aos jornalistas. (*The Angolan girls*, offered spices to the journalists.) – initial topic *in situ*;
(3) *Aos jornalistas*, as angolanas ofereceram especiarias. (*To the journalists*, the Angolan girls offered spices.) – left dislocated topic.

The utterances were taken from the *corpus* previously used for the standard variety (SEP, spoken in Lisbon) [10], where sandhi phenomena, constituent length (in number of syllables) and position of lexical stress in the nuclear word were controlled. For the constituent length, we used the criteria adopted in [8]: short constituents contain less than 5 syllables and long constituents contain 5 or more syllables. At least two renditions of each utterance were produced by 6 female native speakers (aged between 20-45 years old, 3 from each region), through *InAPoP*'s reading task. Nonfluent readings and ungrammatical productions were excluded, resulting in a total of 252 utterances for analysis. A prosodic and intonational analysis was made within the Prosodic Phonology [18, 19, 20] and the Autosegmental Metrical approach to Intonational Phonology ([2, 10, 12, 16, 18], among others). Utterances were annotated in *Praat* [3]. Four tiers of annotation were created: (i) **Intonation**, where nuclear accents and boundary tones were

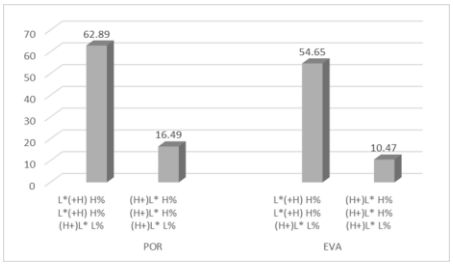
annotated according to P_ToBI [12, 13]; (ii) **Orthography**, where a word by word orthographic transcription was made; (iii) **Phrasing**, where prosodic boundaries where annotated (using P_ToBI and *InAPoP* criteria - 0 = CL, 1 = PW, 2 = PWG, 3 = PhP and 4 = IP); (iv) **Sandhi,** where the relevant segmental phenomena across the parenthetical/topic and the previous/following element was annotated according to the International Phonetic Alphabet (IPA). Other strategies (e.g., pause distribution) and phonetic cues (i.e., local pitch range, measured as the difference between the highest and the lowest value in the F0 curve of the nuclear word of each IP) to mark IP boundaries were also annotated.

3. RESULTS

3.1. Parentheticals

The analysis of intonational contours shows that both in Porto (Por) and Évora (Eva) utterances with inner parentheticals tend to form 3 IPs, and present the contour L*(+H) H% L*(+H) H% (H+)L* L%, as previously described for SEP.

Figure 1: Percentage of occurrence of L*(+H) H% L*(+H) H% (H+)L* L%, and the most frequent alternative contour, in Por and Eva.



Although other contours may occur, the occurrence of L*(+H) H% L*(+H) H% (H+)L* L% is above 50% both in Por and Eva (Figure 1). This dominant contour is illustrated in Figures 2 and 3.

Figure 2: 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.

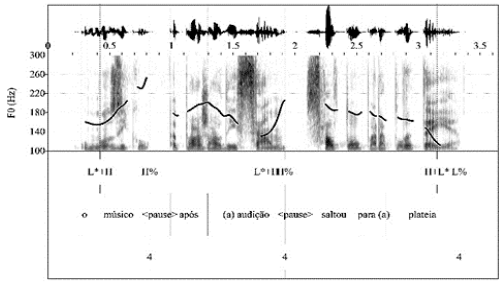
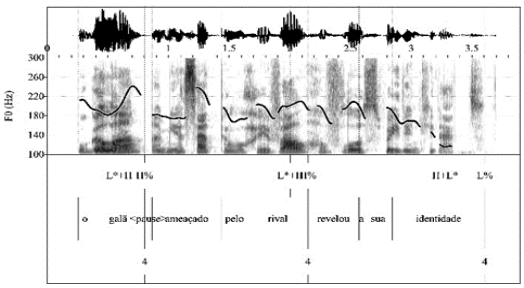


Figure 3: Intonational contour of "O galã, ameaçado pelo rival, revelou a sua identidade" (The hero, threatened by the rival, revealed his identity.), produced by a speaker from Eva.



Variation in local pitch range was found across varieties. The results by constituent length show that short parentheticals in Por behave like long parentheticals, differently from SEP [10]. However, in Eva short parentheticals display lower pitch range values than the long parentheticals, which suggests the formation of compound IPs, as previously reported for SEP (Tables 1 and 2).

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

	1st IP	Parenthetical	3rd IP
Long/Long/Long	52.31	45.26	41.62
Short/Long/Long	60.48	47.25	52.80
Short/Short/Long	48.41	42.34	54.42

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

	1st IP	Parenthetical	3rd IP
Long/Long/Long	41.63	39.75	34.59
Short/Long/Long	47.63	38.42	46.26
Short/Short/Long	55.03	**29.96**	36.61

Variation was also found in sandhi patterns. The blocking of sandhi phenomena in Por and its occurrence in Eva (at the boundary of the second IP, which corresponds to the parenthetical phrase), confirms the tendency to compound IP formation in Eva, since sandhi phenomena might occur at lower IP boundaries but not at the higher IP boundary as previously reported for EP [5, 10, 12]. The percentages of blocking of segmental phenomena at the IP boundary are shown in Figure 4 and 5.

Figure 4: Blocking of **s**egmental phenomena at IP boundaries, in utterances with parentheticals (Por).

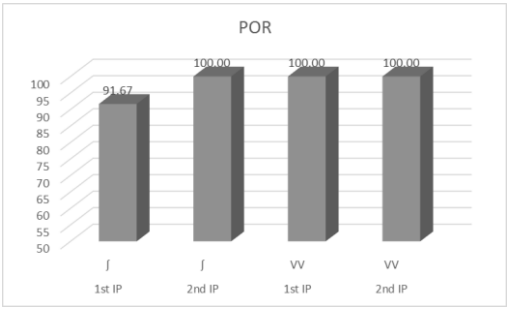
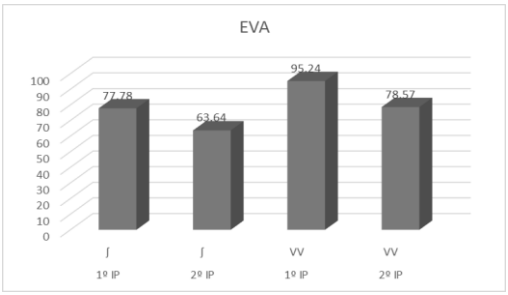
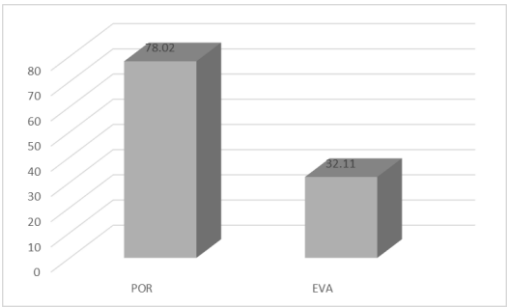


Figure 5: Blocking of segmental phenomena at IP boundaries, in utterances with parentheticals (Eva).



Pause distribution shows that this is a strategy more common in Por than in Eva to mark IP boundaries (Figure 6).

Figure 6: Percentage of pauses in utterances with parentheticals, in Por and Eva.



3.2. Topics

Utterances with topic phrases were analysed by constituent length and topic position. Table 3 shows the results for the most frequent intonational contour by each topic sentence, in each variety:

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

	POR		EVA	
Long_T *in situ* initial/Long_const.	(H+)L* H% (H+)L* L%	85.71	(H+)L* H% (H+)L* L%	75.00
Long_const./Long_T *in situ* final	L*(+H) H% (H+)L* L%	66.67	L*(+H) H% / (H+)L* L% (H+)L* L%	50.00
Short_T left dislocated/Long_const.	L*(+H) H% (H+)L* L%	66.67	(H+)L*L% / H% (H+)L* L%	33.33
Long_T left dislocated/Long_const.	L*(+H) H% (H+)L* L%	66.66	L+ H* H% (H+)L* L%	66.67
Long_const./Long_T right dislocated	L* L% (H+)L* L%	66.66	(H+)L* L% (H+)L* L%	66.67

As shown in Table 3, the contours vary according to topic position and variety. Examples of the most frequent contour in a long left dislocated topic, in Por and Eva, are given in Figures 7 and 8.

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).

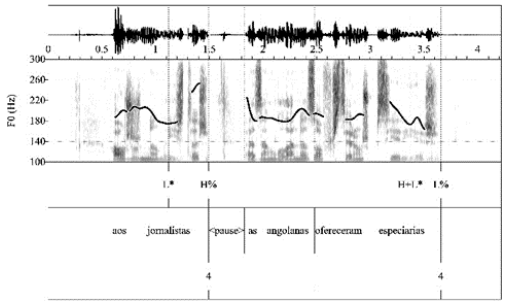
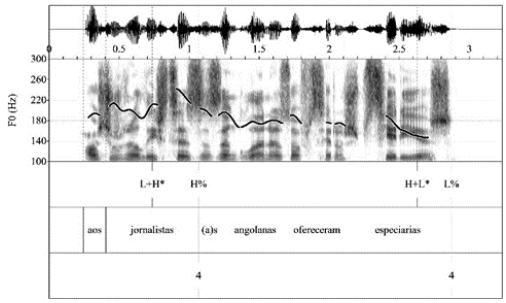


Figure 8: Intonational contour of "Aos jornalistas, as angolanas ofereceram especiarias." (To the journalists, the Angolan girls offered spices.), produced by a speaker from Eva (long left dislocated topic).



Local pitch range variation in short left dislocated topics displays lower results than long left dislocated topics only in Eva (Tables 4 and 5).

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

	1st IP	2nd IP
Long_T *in situ* initial/Long const	88.20	48.63
Long_const./Long_T *in situ* final	30.13	80.08
Short_T left dislocated/Long_const.	65.45	48.93
Long_T left dislocated/Long_const.	80.55	61.28
Long_const./Long_T right dislocated	50.80	36.12

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

	1st IP	2nd IP
Long_T *in situ* initial/Long const	77.42	60.77
Long_const./Long_T *in situ* final	36.79	43.27
Short_T left dislocated/Long const	28.23	61.17
Long_T left dislocated/Long_const.	48.32	61.79
Long_const./Long_T right dislocated	42.17	56.63

These results are in accordance with the previous results for parentheticals, supporting the tendency for short IPs to form compound IPs in Eva. Occurrence of sandhi is, again, higher in the Central-Southern variety, confirming the tendency to compound IP formation (Figures 9 and 10).

Figure 9: Blocking of fricative voicing ([ʃ]) at the inner IP boundary, in topic phrases (Por). 1. Long initial topic *in situ*/Long constituent; 2. Long const. /Long final topic *in situ*; 3. Short left dislocated topic/Long const.; 4. Long left dislocated topic/Long const.; 5. Long const. /Long right dislocated topic.

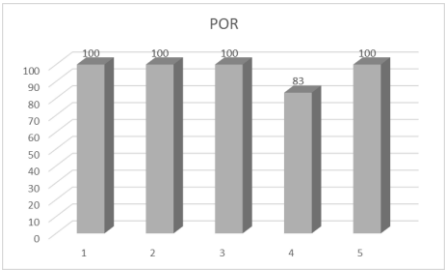
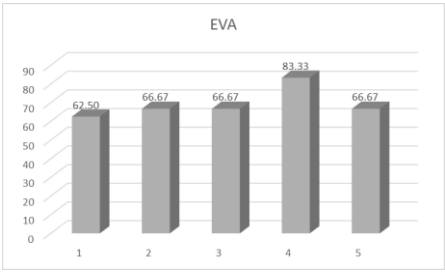
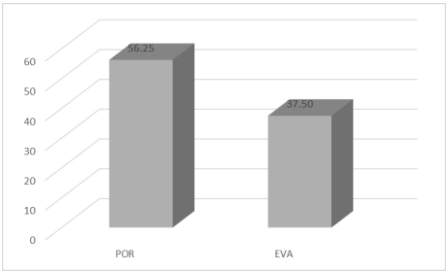


Figure 10: Blocking of fricative voicing ([ʃ]) at the inner IP boundary, in topic phrases (Eva). 1. Long initial topic in situ/Long constituent; 2. Long const. /Long final topic in situ; 3. Short left dislocated topic/Long const.; 4. Long left dislocated topic/Long const.; 5. Long const. /Long right dislocated topic.



Pause distribution in topics shows the same tendency as in parentheticals, with Por displaying higher percentage of pauses (Figure 11).

Figure 11: Percentage of pauses in utterances with topics, in Por and Eva.



4. SUMMARY AND DISCUSSION

Our results demonstrate that parentheticals and topic phrases form IP constituents in the varieties studied. They also show that both in Porto and Évora the intonational contour of parentheticals is similar to the one previously described for the standard variety (SEP) [10, 12]. For topic phrases, long left dislocated topics display a different contour in Porto and Évora: **L*(+H) H%** (H+)L* L%, and **L+H* H%** (H+)L* L%. The higher occurrence of sandhi phenomena at IP boundaries in Évora is in accord with a tendency for short IPs to promote compound IP formation, as previously reported for SEP [10, 12] and Central-Southern varieties [5]. Local pitch range variation, with lower values in short parentheticals in Évora, provides further evidence to the tendency of short IPs to form compound IPs. As for pause distribution, Porto displays a higher percentage of pause insertion at IP boundaries than Évora. We thus conclude that hypothesis (i) *there is no variation in intonational prosodic phrasing for utterances with parentheticals or topics*, is borne out, since parentheticals and topics form independent IPs, similarly to what has been described for other varieties of European Portuguese and for other languages. Moreover, we conclude that hypothesis (ii) *there is variation in prosodic phrasing for these utterances due to length effects and boundary marking strategies* is also borne out, since constituent length seems to promote compound IP formation in Central-Southern varieties (more sensitive to length effects) and not in Northern varieties (less sensitive to length effects), and different nuclear contours and boundary marking strategies (pauses) are used across varieties.

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