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**Are intonational phrasing and pitch
accent distribution inter-related?
Evidence from European Portuguese
varieties**

Overview

- ❖ Intonational phrasing: different grammatical aspects involved
- ❖ Prosodic variation in EP (Standard European Portuguese – SEP – and Northern European Portuguese – NEP)
 - Intonational phrasing
 - Pitch accent (PA) distribution
- ❖ Present research
 - Main goals
 - Materials
 - Conditions under analysis (length and branchingness)
- ❖ Results
 - Main phrasing patterns by condition
 - PA distribution: correlated with phrasing patterns?
- ❖ Summary and discussion

Intonational phrasing: different grammatical aspects involved

- ❖ Marking of intonational boundaries has been associated with \neq grammatical aspects:
 - Branchingness of a syntactic phrase (Nespor & Vogel 1986/2007);
 - Effects of focus (Truckenbrodt 1999; Selkirk 2005);
 - Prosodic weight in terms of length or size of prosodic phrases (Hellmuth 2004 for Cairene Arabic; Jun 2003 for Korean; Frota 2000 for Standard European Portuguese (SEP); Elordieta et al. 2003, 2005 for Catalan, SEP and Spanish; Prieto 2005 for Catalan; Sandalo & Truckenbrodt 2002 for Brazilian Portuguese);
 - Pitch accent distribution (Vigário & Frota 2003, Frota & Vigário 2007 for Northern European Portuguese (NEP) and SEP; Hellmuth 2004, 2007 for Egyptian Arabic).

Prosodic variation in EP: SEP and NEP

Intonational phrasing (Vigário & Frota 2003; Frota & Vigário 2007)

SEP ≈ Egyptian Arabic

- (SVO) prevails (98%)
- (S)(VO) triggered by prosodic length in No. of syllables: becomes relevant (40%) in branching long subjects (S); is dominant in double branching long S (94%)
- Length or branchingness of the object (O): not relevant

NEP ≈ Spanish

- (S)(VO) prevails, even in non-branching cases (53%).

It is influenced by:

- Length: non-branching long S (vs. non-branching short S) favour (S)(VO) ≈ SEP
- Branchingness: branching short S (vs. non-branching long S) favour (S)(VO) ≠ SEP
- O length: branching long O (vs. branching short O) trigger (S)(VO) ≠ SEP

Prosodic variation in EP: SEP and NEP

Pitch accent (PA) distribution (Vigário & Frota 2003)

SEP

- only 17-27% of IP-internal stressed syllables are pitch accented – **sparse PA** distribution.

NEP

- 74% of stressed syllables are pitch accented – **dense PA** distribution.

- ❖ The authors suggest a possible **correlation between intonational phrasing and PA distribution**, as the predominance of **(SVO)** in **SEP** seems to be linked to the **sparse PA distribution** (fewer phrases >> fewer accents), contrasting with a **higher tonal density in NEP**, where **(S)(VO)** phrasing choices are favoured.

Egyptian Arabic: dense PA distribution, but preference for (SVO).

Present research

Background

- ❖ Correlation between phrasing and pitch accentuation? 2 accounts

Correlation

(Vigário & Frota 2003, Frota & Vigário 2007)

- languages and varieties would select \neq phrasing domains to govern pitch accent distribution.
e.g. accent every IP in SEP and accent every PhP in NEP.

No correlation

(Hellmuth 2004, 2007)

- phrasing and domain for pitch accent distribution are orthogonal dimensions (Egyptian Arabic presents an accent on every PW as in NEP, but longer phrases as in SEP).

Present research

Main goals

❖ Main goals:

- to explore the relation between intonational phrasing and PA distribution in 2 other EP varieties;
- to observe whether the suggested correlation between intonational phrasing and pitch accent distribution for SEP and NEP spreads (or not) across EP varieties;
- to contribute to the characterization of the relevant dimensions of variation in the intonational system, both within and across languages.

Present research

Materials

❖ Materials:

- 2 central-southern varieties (Alentejo – Ale – and Algarve – Alg), included in the *Interactive Atlas of the Prosody of Portuguese* (<http://www.fl.ul.pt/LaboratorioFonetica/InAPoP/demo/index>);
- 2 female speakers per variety, 20-40 years-old
- 76 SVO sentences (*Romance Languages Database – RLD*: D'Imperio et al. 2005; Elordieta et al. 2005), read 2x by each speaker (total=304 utt./variety), containing constituents with varying length (short=3/5 syllables; long=5/10/15 syllables) and syntactic complexity (presence/absence of branching in subjects and objects).

NEP

SEP

Ale

Alg



- Short non-branching phrases (3 syllables)
A loura mirava morenos.
(The blond girl looked at dark-haired boys.)
- Long non-branching phrases (5 syllables)
A boliviana falava do namorado.
(The bolivian girl talked about her boyfriend.)
- Short branching phrases (5 syllables)
A nora loura falava do namorado.
(The blond daughter-in-law talked about her boyfriend.)
- Long branching phrases (10 syllables)
O boliviano mulherego memorizava uma melodia.
(The Bolivian ladies' man memorized a melody.)
- Short double branching phrases (9/10 syllables)
A nora morena da velha maravilhava meninos.
(The old lady's dark-haired daughter-in-law marveled boys.)
- Long double branching phrases (15 syllables)
O namorado megalómano da brasileira mirava morenas.
(The Brazilian's girl megalomaniac boyfriend looked at the dark-haired wom

Results

Phrasing patterns

❖ Predominant phrasing pattern

Ale \approx NEP

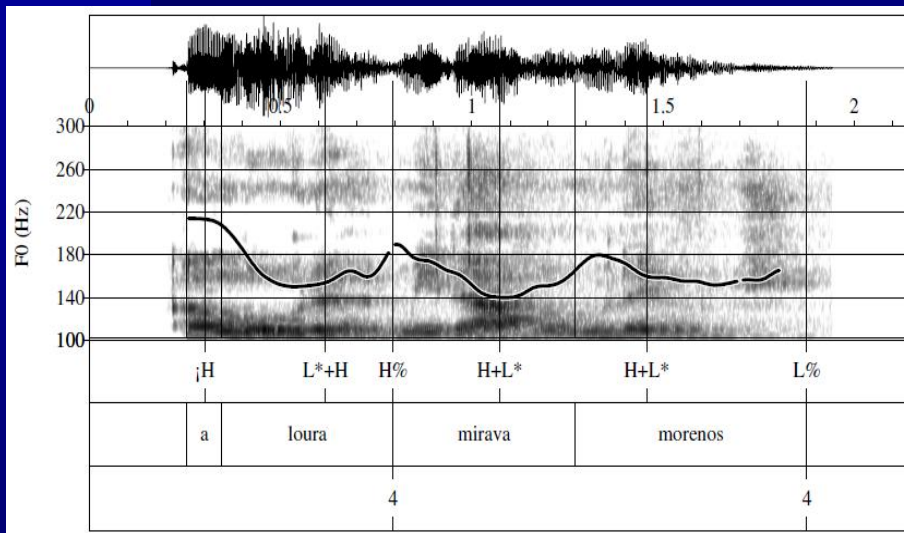


Figure 1 – (S)(VO) in non-branching S. 'The blond girl looked at dark-haired boys'.

Alg \approx SEP

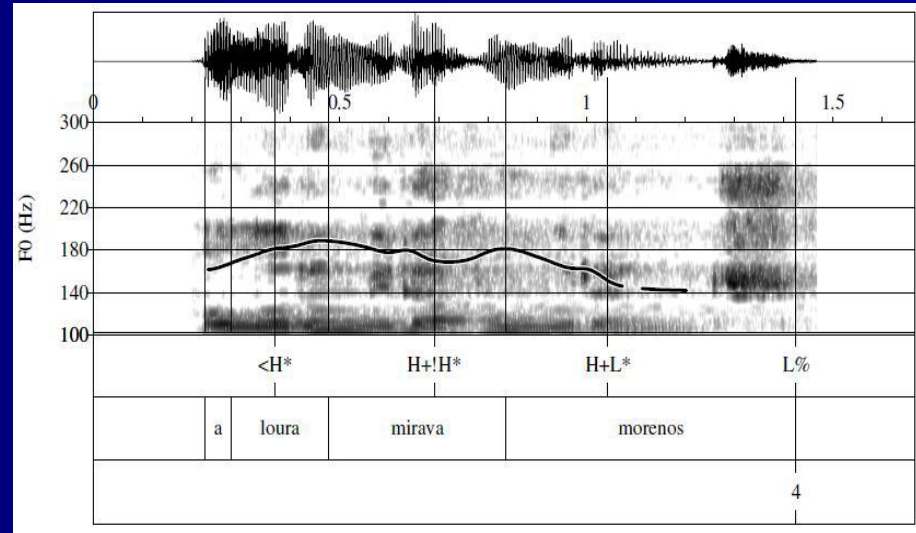


Figure 2 – (SVO) in non-branching S. 'The blond girl looked at dark-haired boys'.

(S)(VO) prevails (66%), even in non-branching cases (51%)

(SVO) prevails. Phrasing pattern in non-branching cases (85%).

Results

Phrasing patterns by condition

- ❖ Branchingness: both in Ale and in Alg, sentences with **branching short S** are more frequently phrased as **(S)(VO) than** sentences with **non-branching long S**. However, branchingness seems to play a stronger role in Alg than in Ale.

	Ale	Alg
Non-branching long S	63%	25%
Branching short S	94%	72%

Table 1 – Role of branchingness in (S)(VO) phrasing – central-southern varieties.

	NEP	SEP
Non-branching long S	56%	4%
Branching short S	69%	4%

Table 2 – Role of branchingness in (S)(VO) phrasing – NEP and SEP. Data from Frota & Vigário 2007).

- ❖ In central-southern varieties, as in NEP, although with varying degrees, branchingness plays a role. **≠ SEP**



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Results

Phrasing patterns by condition

Ale

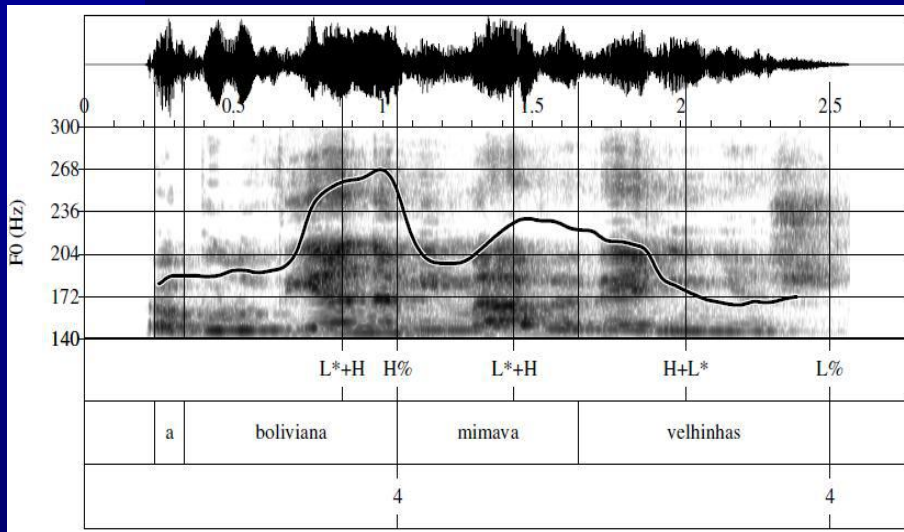


Figure 3 – (S)(VO) in non-branching long S. 'The Bolivian girl spoiled old ladies'.

Alg

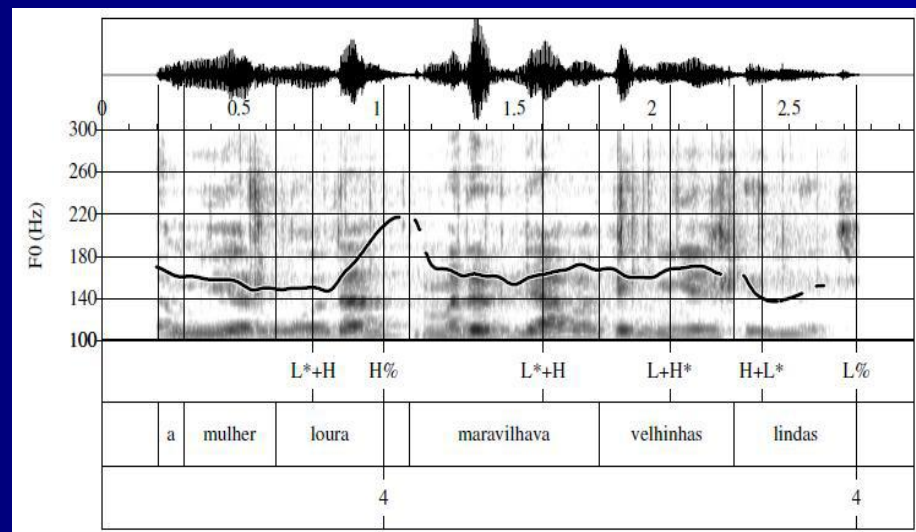


Figure 4 – (S)(VO) in branching short S. 'The blond woman spoiled beautiful old ladies'.

Results

Phrasing patterns by condition

❖ Length in No. syllables:

- **Ale**: length (together with branchingness) is a relevant factor.
- **Alg**: branchingness is the relevant factor (only within branching sentences, length becomes relevant).

	Ale	Alg
Non-branching short S	38%	6%
Non-branching long S	63%	25%
Branching short S	94%	72%
Branching long S	95%	89%

Table 3 – Role of length in (S)(VO) phrasing – central-southern varieties.

In **SEP**, only sentences with **branching long S** are phrased into (S)(VO).

≈ NEP 

 ≠ SEP

Results

PA distribution: correlated with phrasing patterns?

- ❖ As in NEP, and differently from SEP, both Ale and Alg present a **dense PA distribution**: 100% of PA/PW in Ale; 87% of PA/PW in Alg (see *InAPoP* online).
- ❖ While in Ale intonational phrasing and PA distribution seem to be **correlated** (as observed by Vigário & Frota 2003 for NEP and SEP), in Alg there is a **dense PA**, but a preference for **(SVO)**. **≈ Egyptian Arabic**

Varieties	Phrasing	PA
NEP	(S)(VO)	74%
SEP	(SVO)	17-27%
Ale	(S)(VO)	100%
Alg	(SVO)	87%

Table 4 – Intonational phrasing and PA distribution across EP varieties. Data on NEP and SEP from Vigário & Frota (2003) and Frota & Vigário (2007). Data on PA distribution in Ale and Alg from *InAPoP* and Cruz (in progress).

Ale

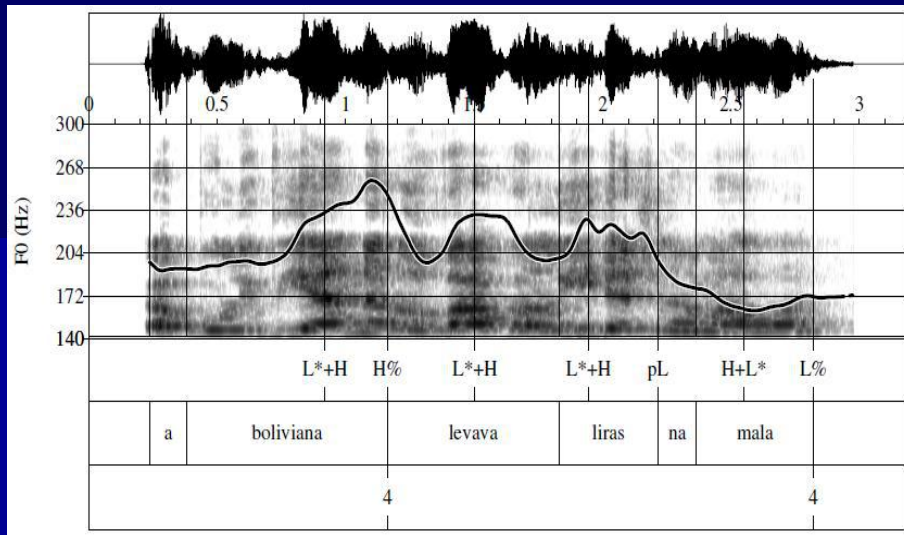


Figure 5 – Dense PA distribution associated with (S)(VO) phrasing. ‘The Bolivian girl took liras in her purse.’

Alg

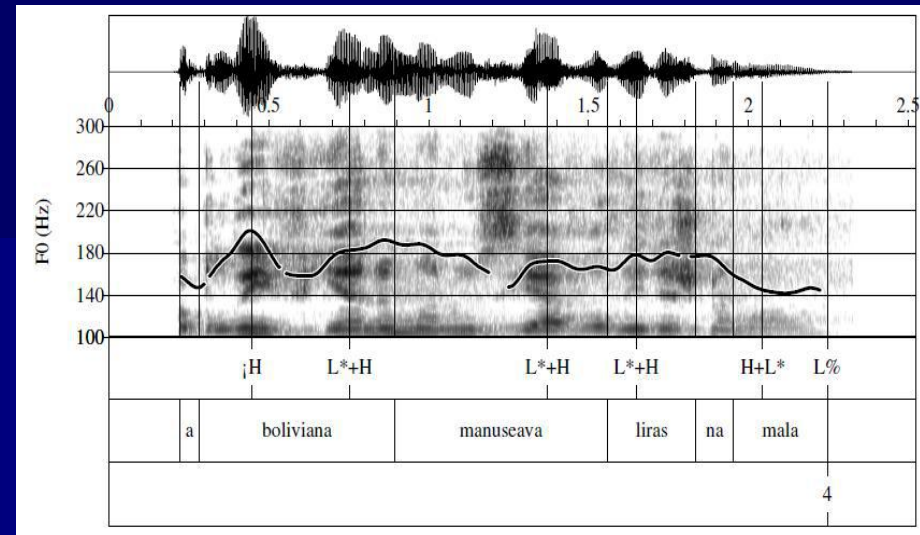


Figure 6 – Dense PA distribution, but (SVO) phrasing. ‘The Bolivian girl handled liras in her purse.’

SEP

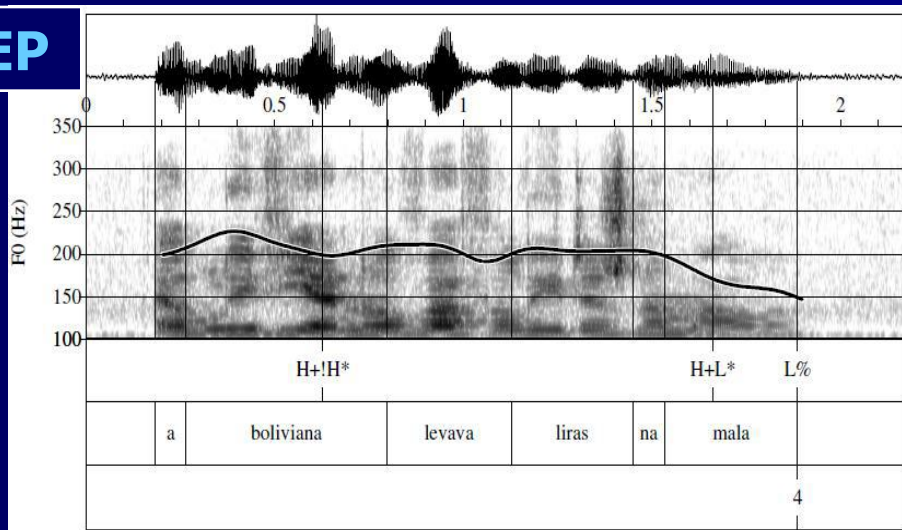


Figure 7 – Sparse PA distribution associated with (SVO) phrasing. ‘The Bolivian girl took liras in her purse.’

Summary and discussion

❖ Intonational phrasing (by branchingness and length):

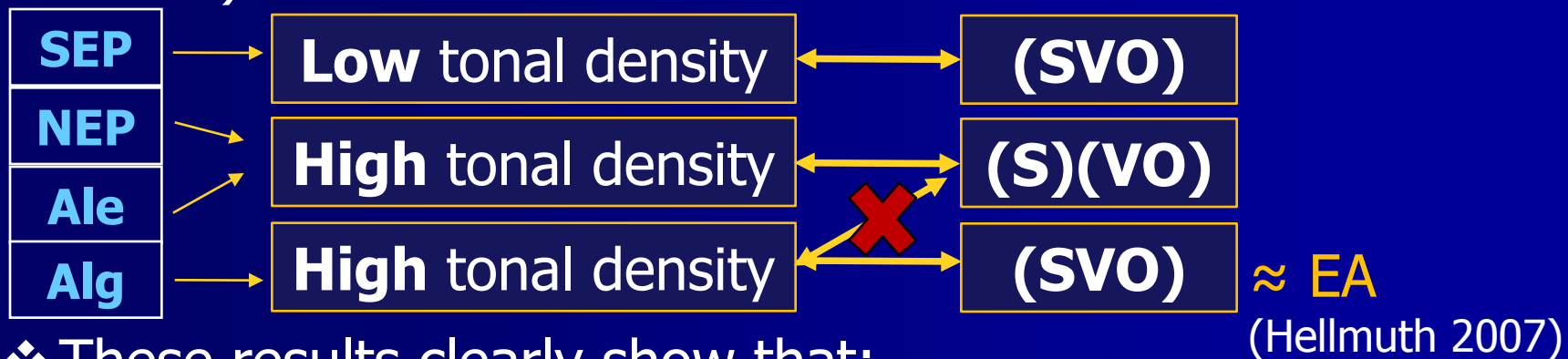
Condition		NEP		SEP		Ale		Alg	
Branchingness	Length	(S)(VO)	(SVO)	(S)(VO)	(SVO)	(S)(VO)	(SVO)	(S)(VO)	(SVO)
Non-branching	Short S	50%	50%	0%	100%	38%	63%	6%	94%
	Long S	56%	44%	4%	96%	63%	38%	25%	75%
Branching	Short S	69%	31%	4%	96%	94%	6%	72%	28%
	Long S	63%	37%	40%	60%	95%	5%	89%	11%
2x Branching	Short S	83%	17%	67%	33%	88%	13%	79%	21%
	Long S	71%	29%	94%	6%	79%	21%	71%	29%

Table 5 – Intonational phrasing by branchingness and length conditions, across EP varieties. Data on NEP and SEP extracted from Vigário & Frota (2003) and Frota & Vigário (2007).

- (S)(VO) prevails in NEP and Ale, while in SEP and Alg (SVO) is preferred.

Summary and discussion

- ❖ Is PA distribution correlated with intonational phrasing?
 - Both Ale and Alg present a high tonal density (almost a pitch accent by PW), like in NEP (contra 17-27% PA/PW in SEP).



- ❖ These results clearly show that:
 - Both phrasing and PA distribution are important factors for the characterization of the intonational system;
 - The 2 dimensions may vary independently across languages and also across language varieties.



Muito obrigada!
Thank you!



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