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Workshop on Prosodic Annotation
13th April, Ohio State University

Prosodic variation in European Portuguese: issues in prosodic annotation across varieties and speech styles

Overview

- The InAPoP project
- Prosodic variation in EP (Standard European Portuguese – SEP – and Northern European Portuguese – NEP)
  - Phrasing
  - Intonation
    - (i) pitch accents and nuclear contour types
    - (ii) pitch accent distribution
- Present research
  - Data under analysis and materials
  - Issues for discussion
- Results and discussion
  - Text-tune accommodation
    - (i) epenthesis
    - (ii) vowel lengthening
    - (iii) vowel split
  - Tonal marking of prosodic edges
- Summary

The InAPoP project

http://ww3.fl.ul.pt/LaboratorioFonetica/InAPoP/demo/index.htm

- The *Interactive Atlas of the Prosody of Portuguese* aims at:
  - providing a detailed description of prosodic variation in European, Brazilian and African Portuguese (constituency, intonation and rhythm);
  - comparing them with other Romance languages.
- Speech database being collected:
  - female speakers
  - 2 age groups (20-45 years-old and 60+ years-old)
  - 4 ≠ types of task: reading task, discourse completion (set of situations eliciting ≠ sentences types and pragmatic meanings), map task and conversation.

Non-prosodic variation in EP

(Cintra 1971, Segura & Saramago 2001)

- **Northern varieties**
  - Trás-os-Montes and Alto Minho
  - Baixo Minho (Braga is already analysed – cf. NEP data and results), Douro and Beiras
- **Central-Southern varieties**
  - Littoral Centre
  - Interior Centre and South
  - Areas with peculiar features

http://cvc.instituto-camoes.pt/conhecer/bases-tematicas/historia-da-lingua-portuguesa.html

Prosodic variation in EP: SEP and NEP

- Phrasing: in SEP, IPs are mapped from root sentences, thus subjects, verbs and objects are usually grouped together in the same IP [(SVO)], except for long subjects (+ than 8 syllables), which tend to form a single IP [(S)(VO)] – Elordieta et al. 2005. In NEP, subject, verb and object are organized in 2 IPs (S)(VO), independently of length in number of syllables.
- Pitch accents and nuclear contour types:

Variety	Declarative		Wh- question	Yes-No question	
	Broad Focus	Narrow Focus		Broad Focus	Narrow Focus
SEP	H+L* L%	H*+L	H+L* L% or LH%	H+L* LH%	L*+H HL% or LH%
NEP	L* L%	---	L* L%	L* H- L%	---

Table 1 – Declarative and Question nuclear contours (with broad and narrow focus) in SEP and NEP.

Prosodic variation in EP: SEP and NEP

- Pitch accents and nuclear contour types (cont.): besides declaratives and interrogatives, other sentence types were intonationally analysed (only in SEP).

request	(H*) L* L%	greeting call	H* !H%
command	L*+H/H*+L L%	insistent call	H* L%

- Pitch accent distribution: in SEP, only 17-27% of IP-internal stressed syllables are pitch accented – sparse pitch accent distribution (Vigário & Frota 2003). In NEP, there is a dense pitch accent distribution – 74% of stressed σ are pitch accented.
- The NEP variety is much closer to other Romance languages (as Spanish or Catalan) than SEP.

Present research

Data under analysis and materials

- ❖ Data analysed so far:
- 3 types of task
- 4 varieties (except the reading task, not applied in the North)
- 2 female speakers (20-45) per variety
- ❖ Materials used for data collection:
- reading task: 224 sentences/variety, including declaratives, interrogatives, requests and calling contours (Frota 2000, in press) and 168 sentences/variety controlled for syllable length and branchingness (D'Imperio et al. 2005)
- discourse completion: 12 sentences/variety corresponding to confirmation seeking and imperative yes-no questions
- map task: 19-26 declaratives and 1-2 interrogatives

Present research

Issues for discussion

- Accommodation of the segmental string to the tonal one (not tune-text accommodation, as described for either compression or truncation languages – Ladd 1996/2008)
- EP is neither a truncation nor a compression language: when the tune is too complex for the text, the segmental string is extended to cope with tonal realization (Frota 2000, 2002, in press): nuclear words with final stress.
- 3 main strategies previously found in yes-no questions and calling contours:

epenthesis	Ela foi ver o mar[ɨ] ?
vowel lengthening	Valdem[aa]r
vowel split	J[wɐ˜.ũ] or J[wɐ.ɐ˜w]

Results

Text-tune accommodation

- across varieties, speech styles and sentence types

Ale

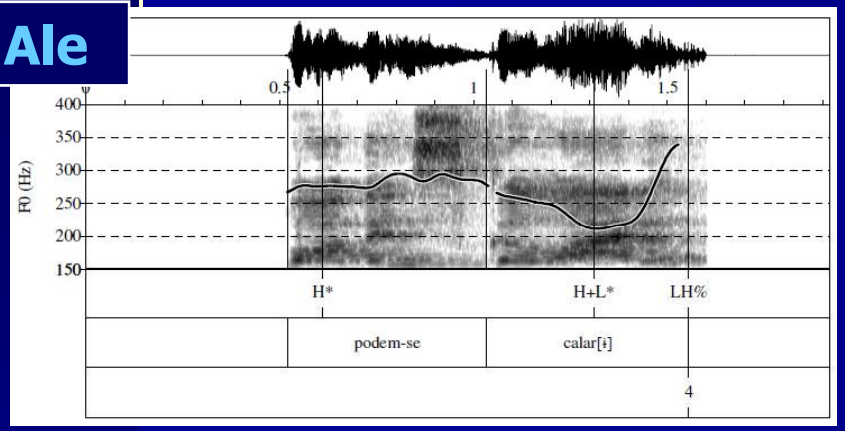


Figure 1 – Imperative yes-no question in discourse completion task. 'Can you shut up?'.

Alg

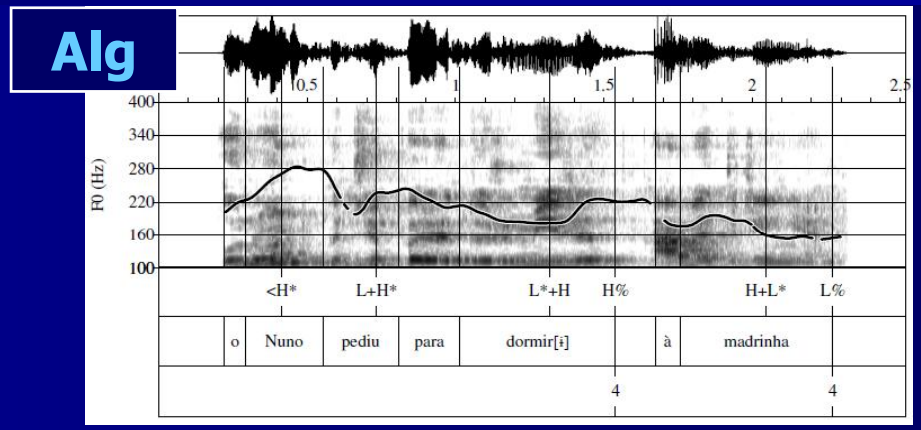


Figure 2 – Declarative in reading task. 'Nuno asks to sleep, his godmother'.

Por

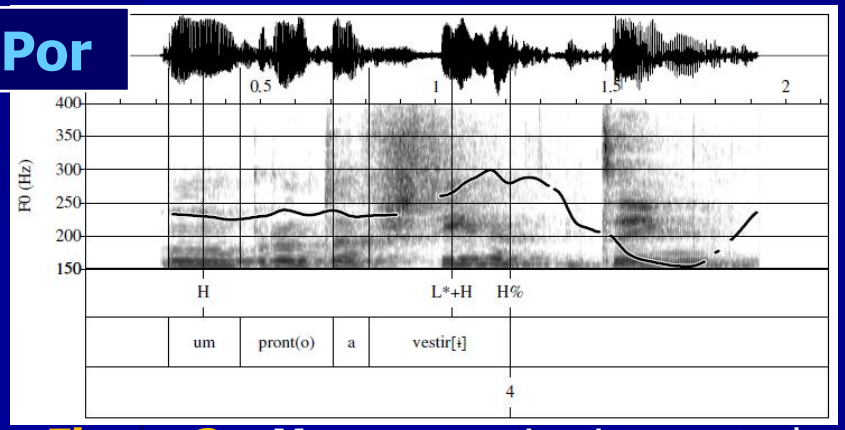


Figure 3 – Yes-no question in map task. 'A ready-to-wear?'.

SEP

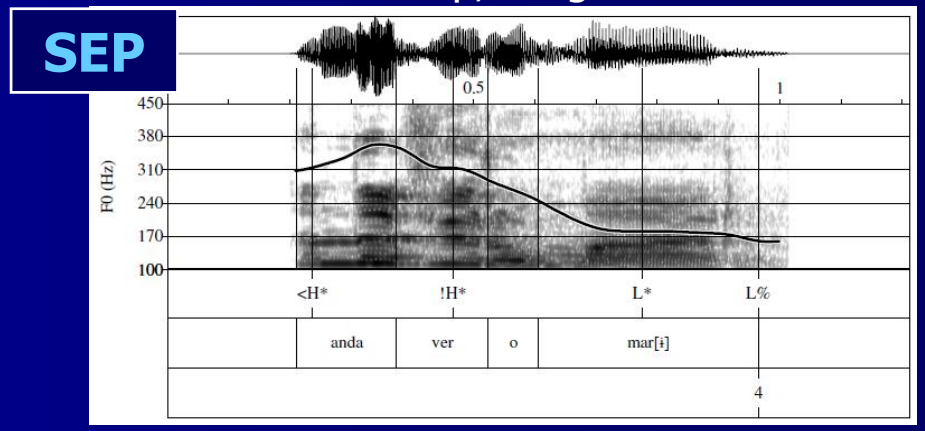


Figure 4 – Request in reading task. 'Let's go see the sea'.

Results

Text-tune accommodation

- It occurs in calling contours (both greeting and insistent), across varieties.

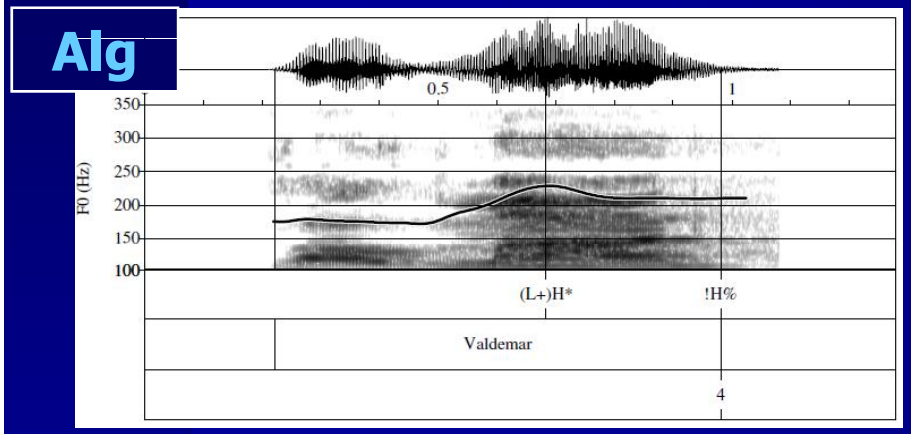


Figure 5 – Calling contour (greeting) in reading task. 'Valdemar'.

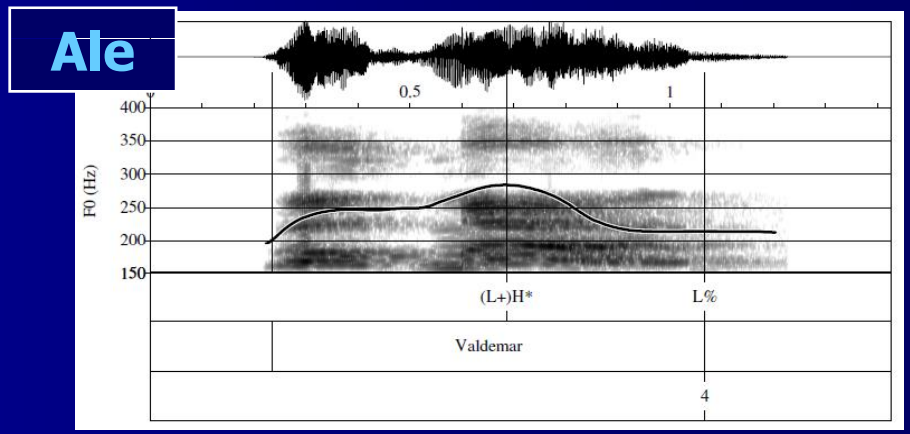


Figure 6 – Calling contour (insistent) in reading task. 'Valdemar'.

- Calling contours produced in the discourse completion task are not triggers
- Map tasks are not prepared to elicit this sentence type

Results

Text-tune accommodation

- It mainly occurs in calling contours (both greeting and insistent), across varieties. It also occurs (2) in interrogatives produced by Ale speakers, in the reading task (14) - 8%.

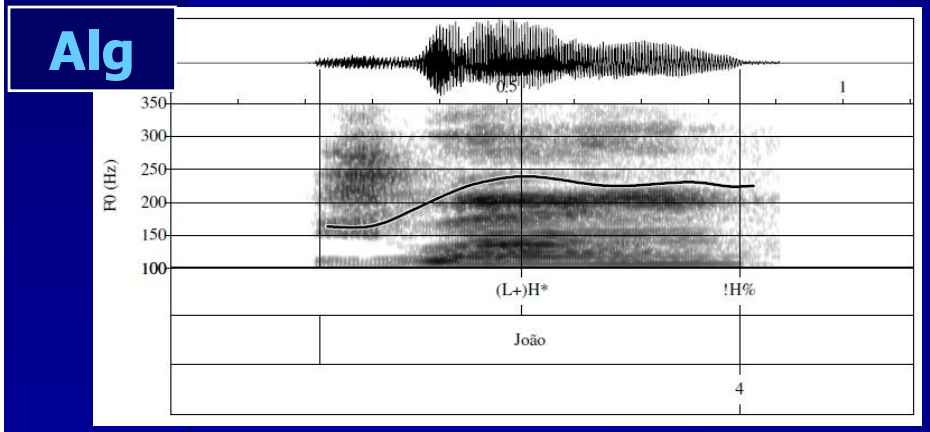


Figure 7 – Calling contour (greeting) in reading task. 'João' produced as ['ʒwɐ˜.ũ].

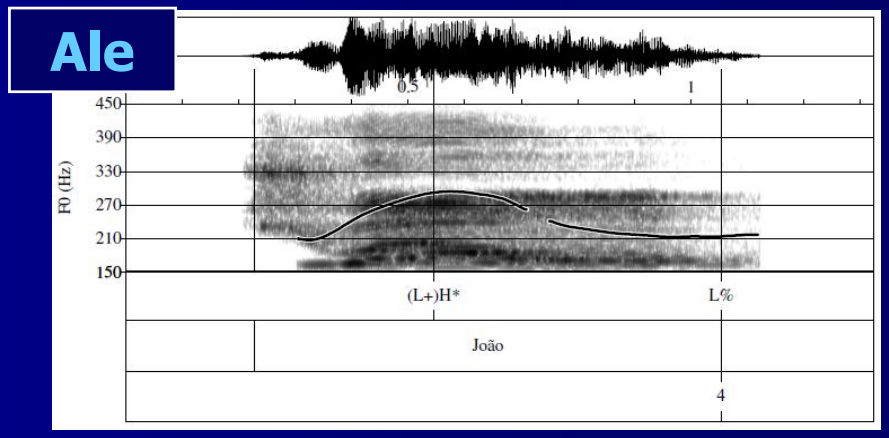


Figure 8 – Calling contour (insistent) in reading task. 'João' produced as ['ʒwɐ˜.ũ].

- Same constraints as for vowel lengthening.

Results

Text-tune accommodation

Sentence types	Reading			Disc. Completion				Map Task			
	SEP	Ale	Alg	SEP	Ale	Alg	Por	SEP	Ale	Alg	Por
declarative	---	ep	ep					ep	ep	---	ep
interrogative	ep	ep/vs	---	ep	ep	---	ep	---	ep	---	ep
request	ep	ep	---								
call	vs/vl	ep/vs/vl	vs/vl								

Table 2 – Distribution of text-tune accommodation strategies per sentence type, across varieties and speech styles.

- Epenthesis is the most frequent strategy to accommodate the segmental string to the tonal one
- Vowel split and vowel lengthening seem to be dependent on the sentence type (calling contours)

Sentence types	Reading			Disc. Completion				Map Task			
	SEP	Ale	Alg	SEP	Ale	Alg	Por	SEP	Ale	Alg	Por
declarative	---	ep	ep					ep	ep	---	ep
interrogative	ep	ep/vs	---	ep	ep	---	ep	---	ep	---	ep
request	ep	ep	---								
call	vs/vl	ep/vs/vl	vs/vl								

- In the reading task, it frequently affects declaratives produced in Ale (22%). In Alg, although also possible, it is not frequent (2%) ⟶ epenthesis triggered by prosodic distribution (IP-final) and not text-tune accommodation.
- Declaratives produced in the map task, affected by epenthesis, are prosodically characterized by continuation rises, which seem to trigger this phenomenon (to be confirmed with the analysis of the conversation task).

Results

Text-tune accommodation

Sentence types	Reading			Disc. Completion				Map Task			
	SEP	Ale	Alg	SEP	Ale	Alg	Por	SEP	Ale	Alg	Por
declarative	0%	22%	2%					13%	21%	0%	11%
interrogative	17%	58%	0%	50%	83%	0%	8%	0%	100%	0%	50%
request	8%	17%	0%								
call	58%	29%	58%								

Table 3 – Distribution of text-tune accommodation strategies (%) per sentence type, across varieties and speech styles.

- The majority of cases occur in interrogatives and calling contours, confirming previous work (Frota 2000, 2002, in press)
- Interrogatives are affected by text-tune accommodation strategies across speech styles and varieties with a high incidence (H+L* LH%, L*+H H%)

Present research

Issues for discussion

- Tonal marking of specific prosodic phrases (not every prosodic edge of a given type):

- Usually, a given phrasal level (IP, ip or PhP) is marked as intonationally relevant by the presence of an initial and/or final edge tone
- Previous work on SEP showed that, unlike in English, Italian, French or Bengali, only IPs are signalled by edge tones (Frota 2000)
- In Ale (central-southern variety), the left edge of the last PhP of the IP is signaled by a low edge tone (Lp), across sentence types (only neutral sentences) and speech styles, whether the IP is internal or final (≠ BP: L- marks the right edge of a focalized phrase)

Results

Tonal marking of specific prosodic edges

final IP

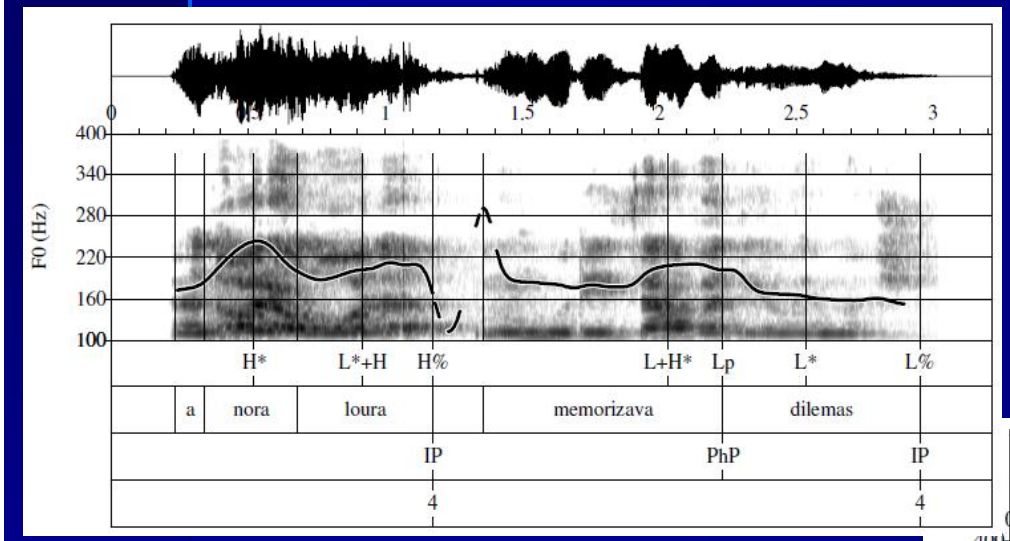


Figure 9 – Declarative in reading task. 'The blond daughter-in-law memorized dilemmas'.

internal IP

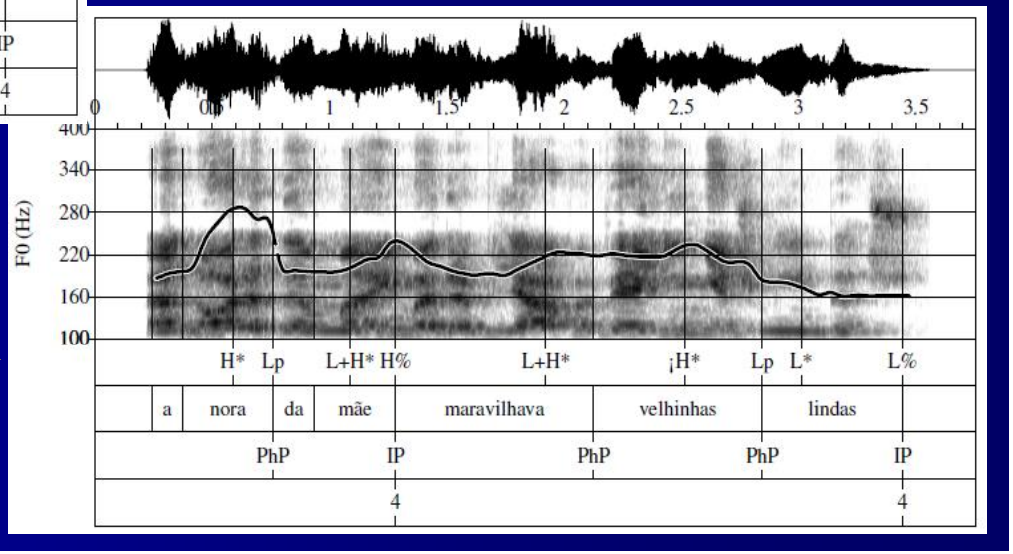


Figure 10 – Declarative in reading task. 'Mother's daughter-in-law marveled beautiful old ladies'.

Results

Tonal marking of specific prosodic edges

BP

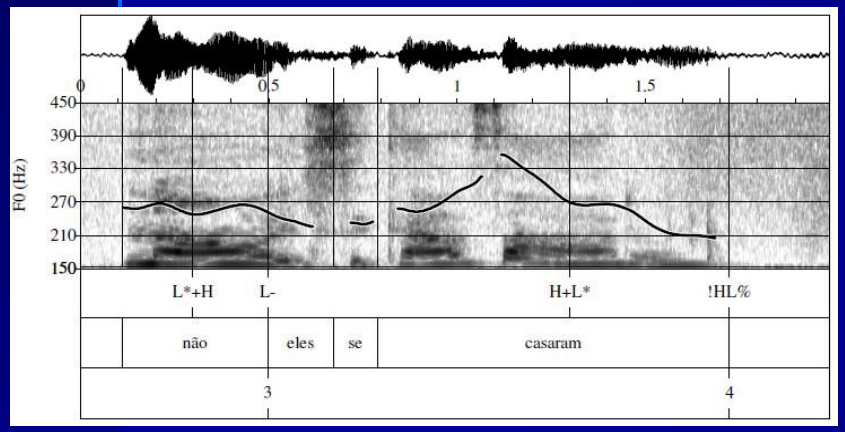


Figure 11 – Declarative with contrastive focus (discourse completion task). 'No. They got married'.

Catalan

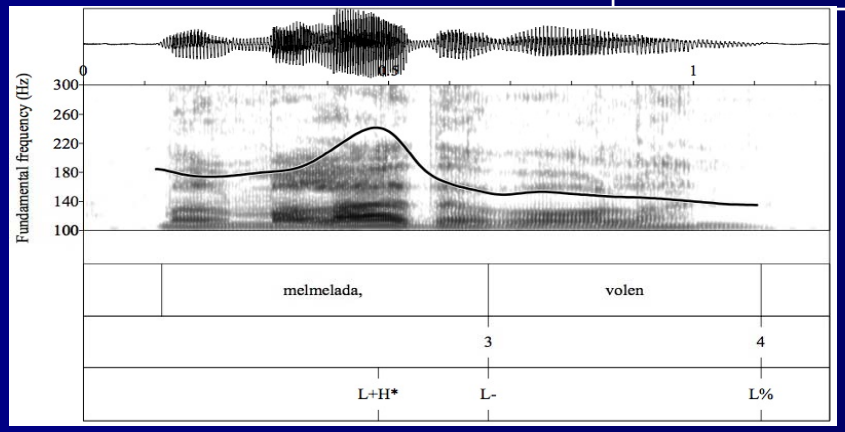
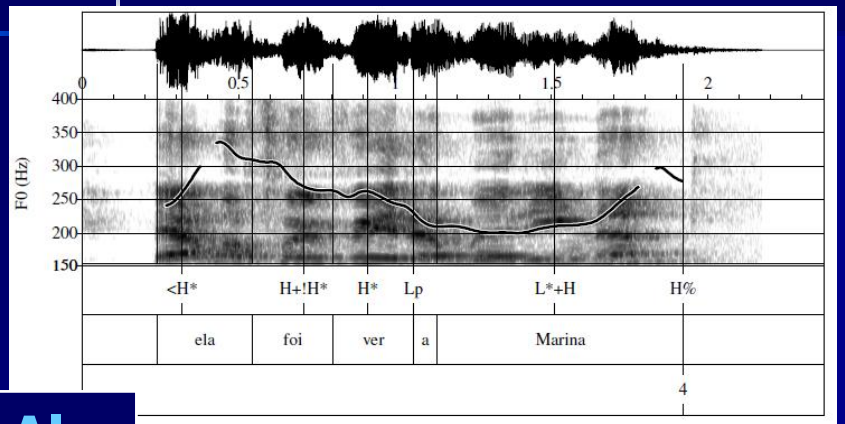


Figure 12 – Declarative with contrastive focus (discourse completion task). 'They want jam' (Prieto in press).

- ≠ distributional properties from the Lp: in BP, L- marks the right edge of a focalized phrase (similarly to other Romance languages, such as Catalan).
- L- marks ≠ prosodic phrases, both containing the focalized element: PhP in BP; ip in Catalan.

Results

Tonal marking of specific prosodic edges



Alg

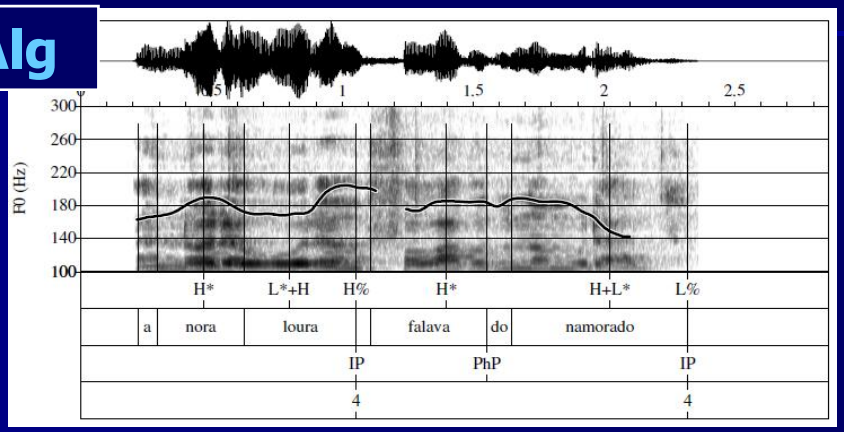
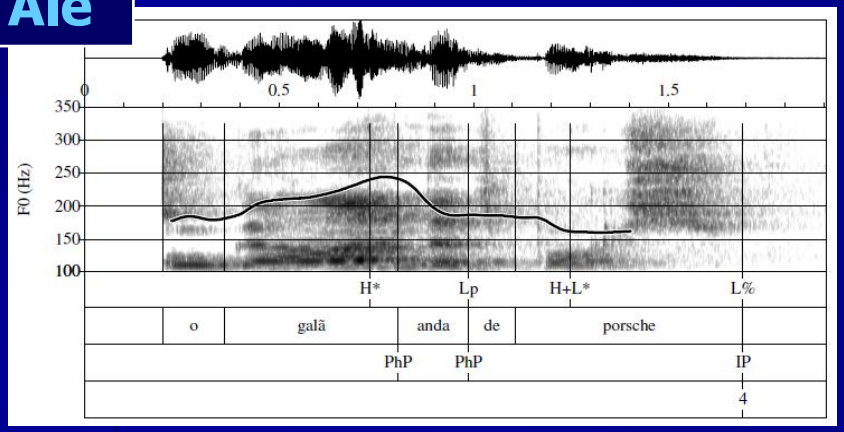


Figure 15 – Branching subject in reading task. 'The blond daughter-in-law spoke about her boyfriend'.

Ale



Figures 13 and **14** (left) **–** Yes-no question in reading task (top). 'Has she gone to see Marina?'. Neutral declarative in discourse completion task (bottom). 'The hero drove a Porsche'.

- Lp only occurs in Ale; Alg (also a central-southern variety) does not show evidence for this tonal-edge marking
- Lp occurs across sentence types and speech styles

Summary

Text-tune accommodation

- Epenthesis occurs across varieties, sentence types and speech styles ≠ vowel lengthening and vowel split also occur across varieties, but they seem to be limited to calling contours (further analysis in others speech styles is needed)
- Interrogatives and calling contours trigger most cases of text-tune accommodation, confirming previous observations on SEP (Frota 2000, 2002, in press)
- In BP varieties (≠ EP), these strategies do not apply

Tonal and/or segmental string adjustments as a relevant dimension of variation in the realization of intonation systems

Prosodic labeling should capture which strategy is implemented in a given language/variety

Summary

Tonal marking of specific prosodic edges

- In Ale (only), the left edge of the last PhP of the IP is signaled by a low edge tone (Lp), across sentence types (only neutral sentences) and speech styles, whether the IP is internal or final
- In BP (as e.g. in Catalan), the tonal boundary marking L- is associated to the right edge (not the left) of a given prosodic constituent: PhP in BP; ip in Catalan
- Since there are ≠ distributional properties between L- and Lp and since they do not overlap within varieties, should we also use L- in Ale? But same label, ≠ properties?

Prosodic edges and tonal boundary marking should be dissociated in prosodic labeling systems in order to account for prosodic variation within and across languages (not 1-to-1-mapping).

Muito obrigada!

Thank you!

Acknowledgements

- To Pilar Prieto and her *Grup d'Estudis de Prosòdia* (GrEP) for their helpful comments on a very preliminary presentation of tonal-edge marking in Ale.
- To Marina Vigário for her precious comments and suggestions.
- To all speakers involved.

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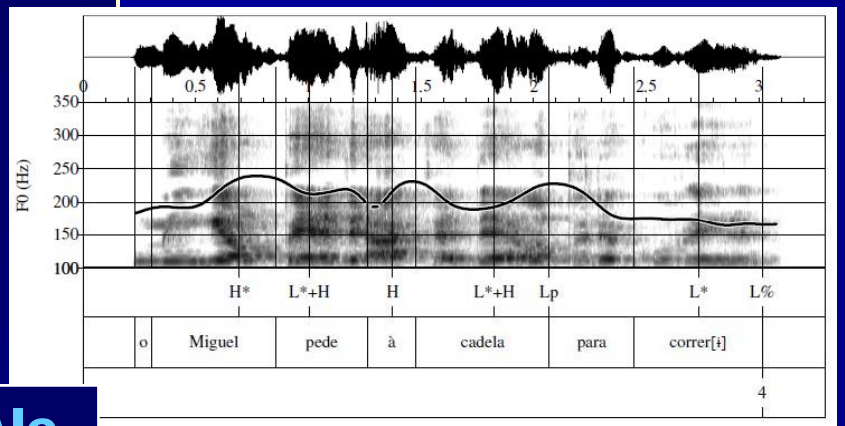
PhD project funded by Fundação para a Ciência e a Tecnologia BD/61463/2009.

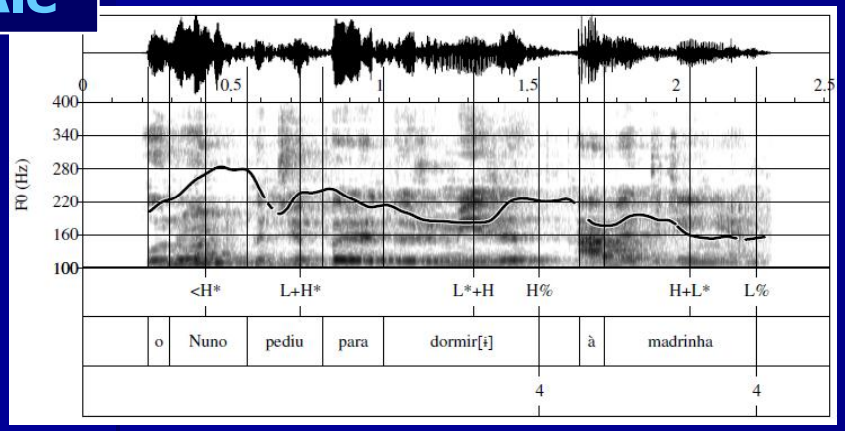
FCT Fundação para a Ciência e a Tecnologia
MINISTÉRIO DA CIÊNCIA, TECNOLOGIA E ENSINO SUPERIOR

Results

Text-tune accommodation



Ale



Figures (at left) – Declaratives in reading task, affected by the epenthesis. Top: IP final ('Miguel asks his dog to run'); bottom: IP internal, with continuation rise ('Nuno asks to sleep, his godmother').

Por

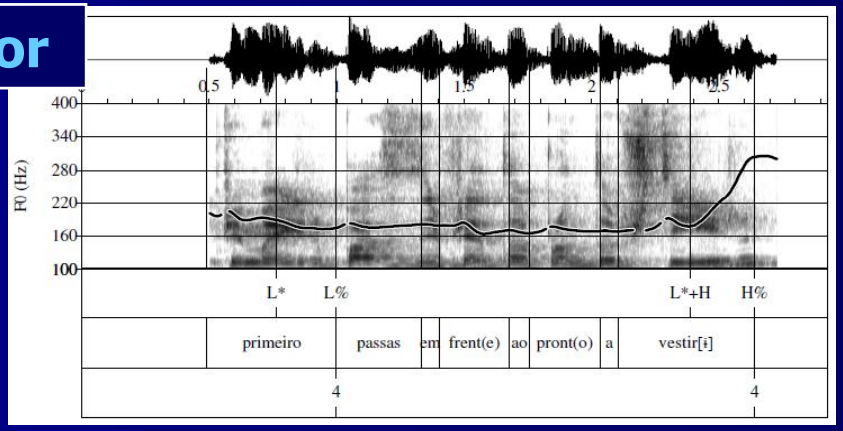


Figure (above) – Declarative with continuation rise, produced in map task. 'First of all, you pass in front of the ready-to-wear'.

Vowel lengthening

Results

Text-tune accommodation

SEP

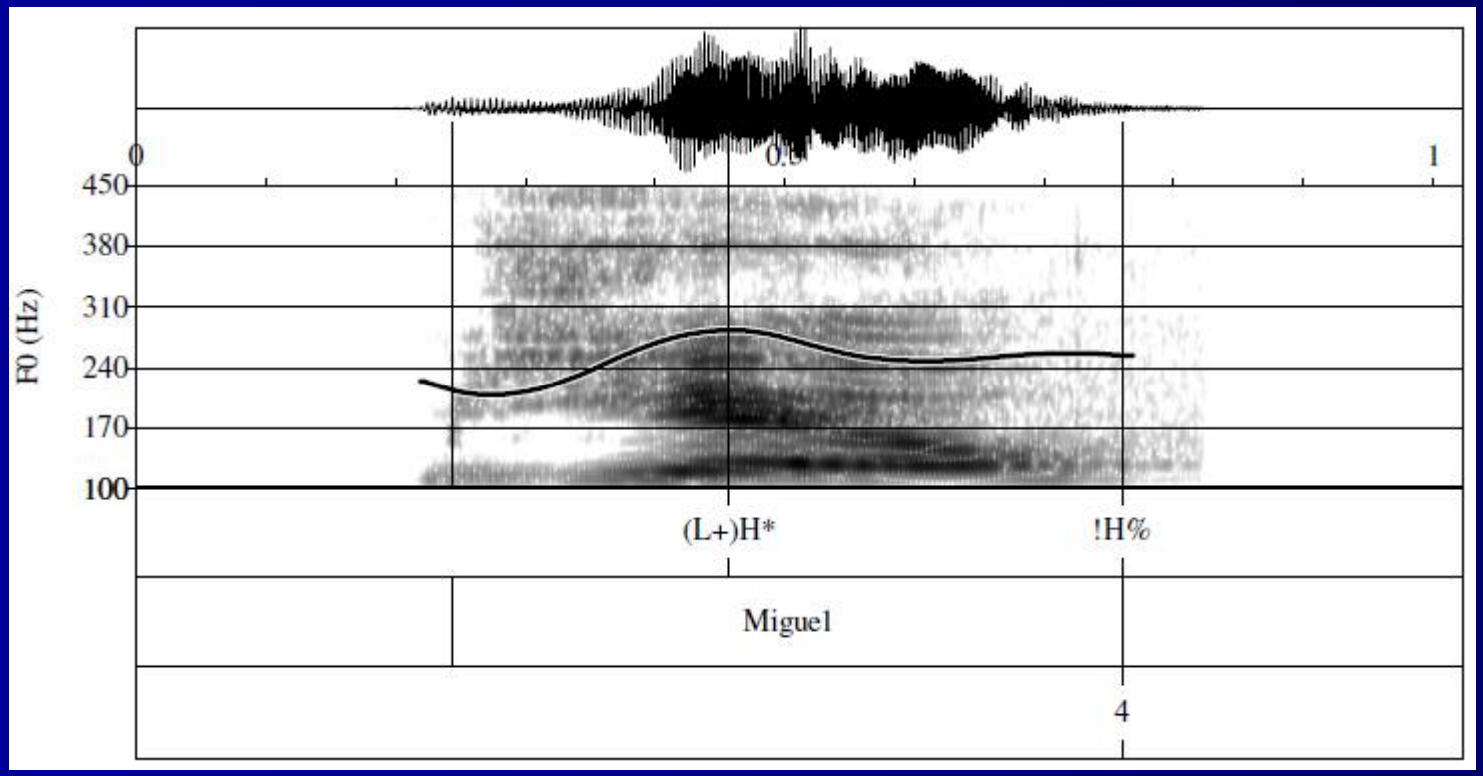


Figure – Calling contour (greeting) in reading task. 'Miguel'.

Vowel split

Results

Text-tune accommodation

SEP

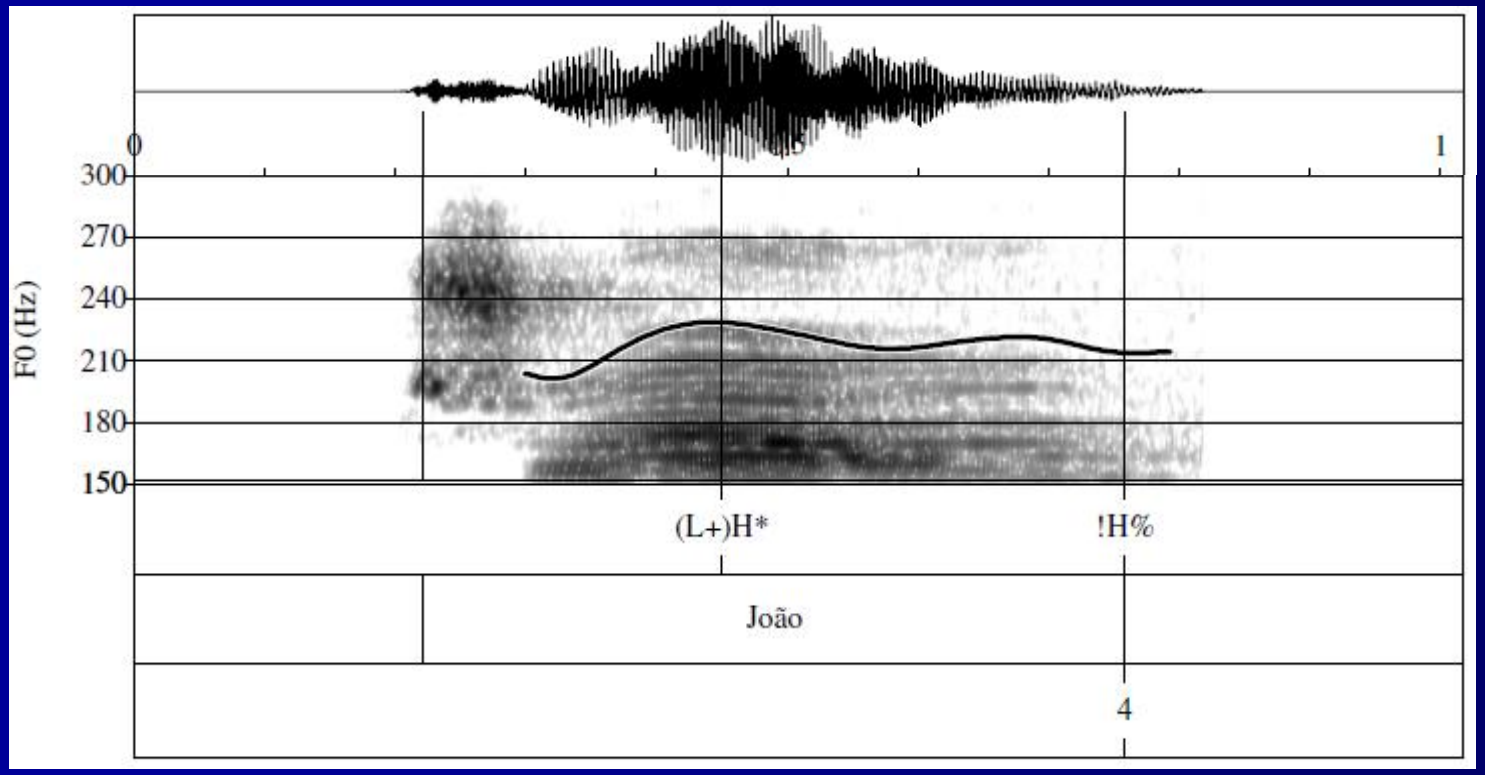


Figure – Calling contour (greeting) in reading task. 'João'.

Results

Tonal-edge marking of specific prosodic phrases

Ale

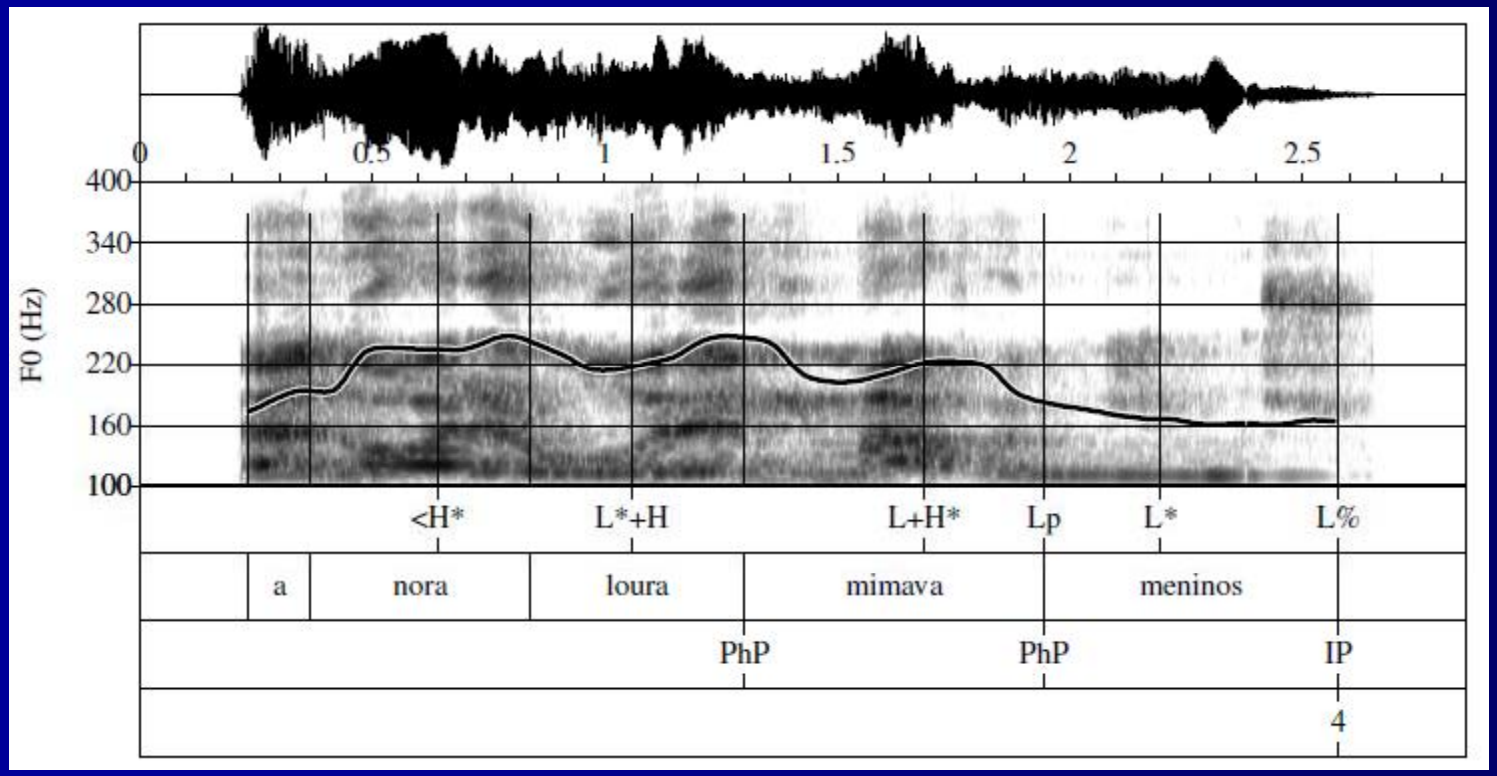


Figure – Declarative in reading task. 'The blond daughter-in-law spoiled boys'.

Results

Tonal-edge marking of specific prosodic phrases

Ale

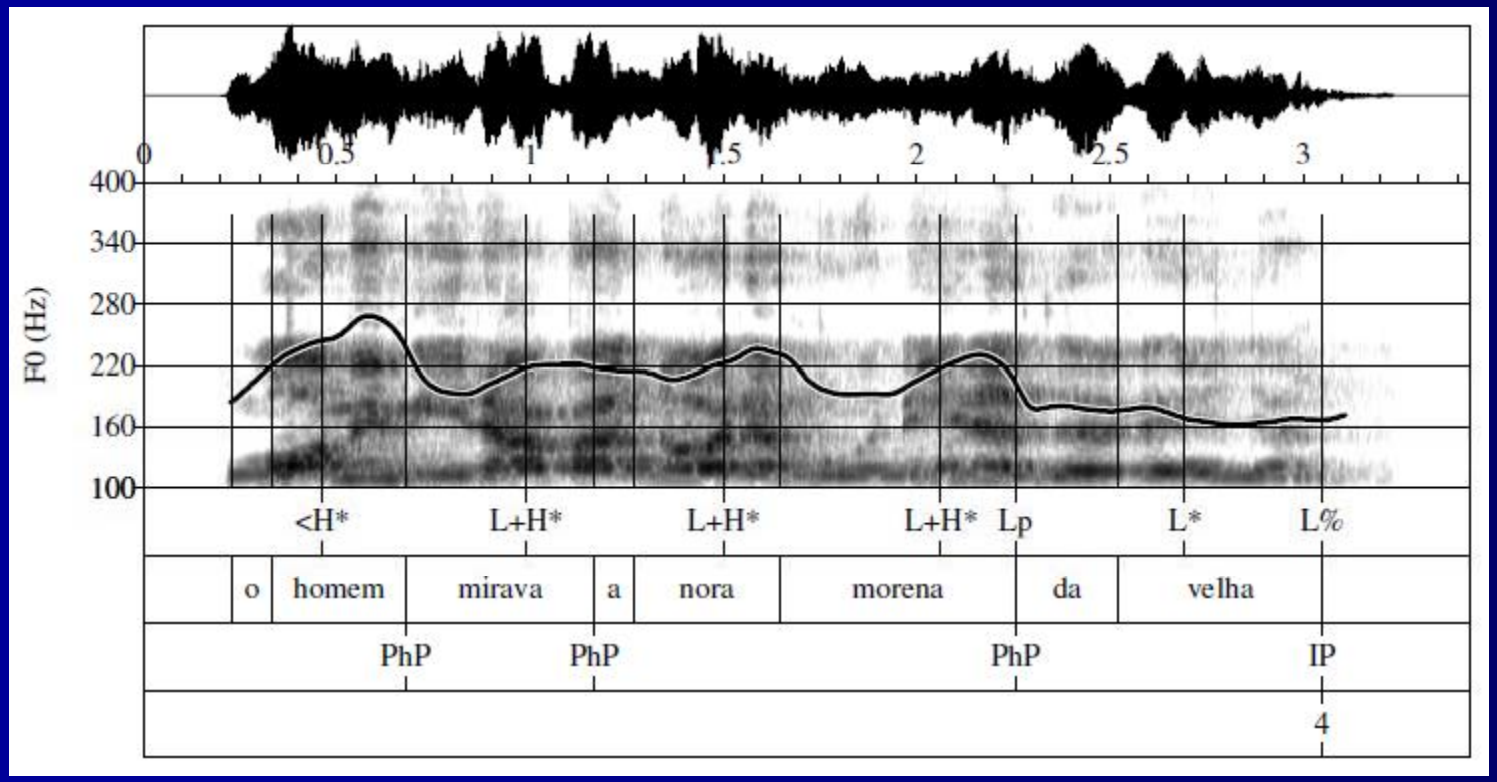


Figure – Declarative in reading task. 'The man looked at the old lady's dark-haired daughter-in-law'.

Results

Tonal-edge marking of specific prosodic phrases

Ale

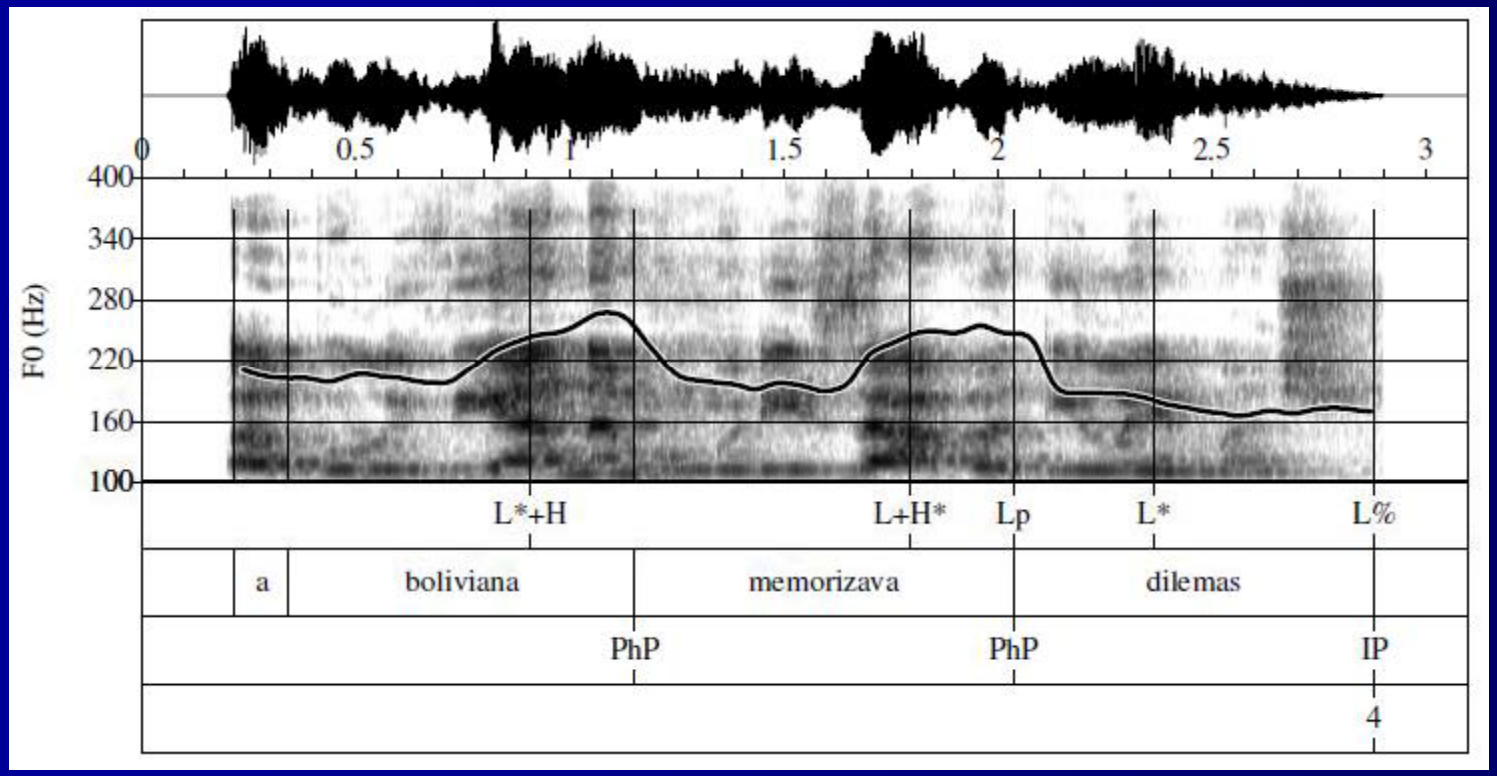


Figure – Declarative in reading task. 'The bolivian girl memorized dilemmas'.