



/ Lab|F|o|n /



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Pre-Romance ToBI Workshop

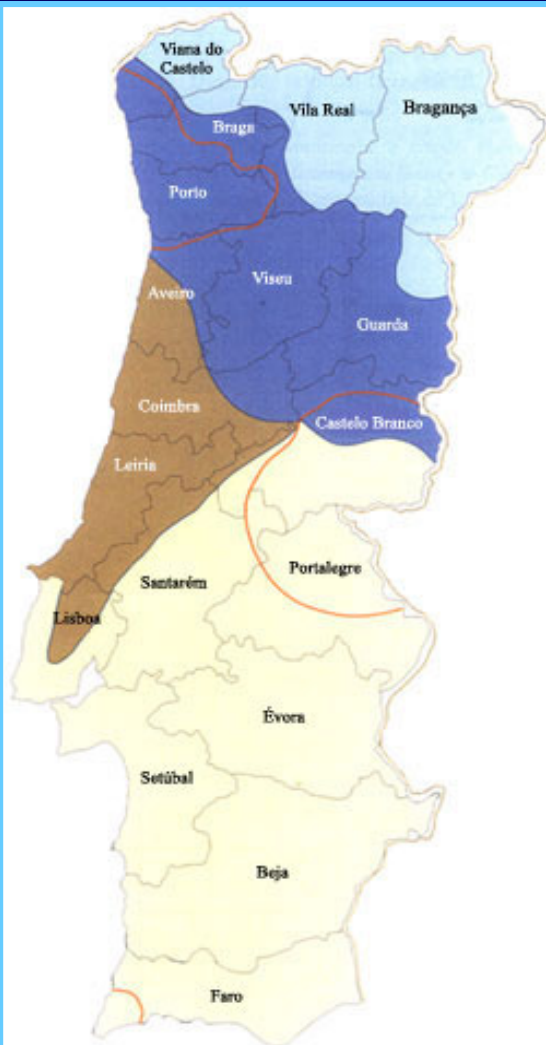
22nd December, Universitat Pompeu Fabra

**P-ToBI: main issues and application
to four varieties of EP**

Overview

- ❖ Variation in EP
- ❖ Previous work on EP prosody
- ❖ Prosodic features of SEP
 - Phrasing
 - Intonation
 - (i) tonal density per sentence type
 - (ii) intonational typology (NPAs and boundaries)
- ❖ Prosodic variation in EP: NEP (Braga)
- ❖ Preliminary data on two Southern varieties
 - Production
 - (i) parameters analysed
 - intonational typology
 - tonal density/sentence type
 - specific tonal events
 - (ii) results and main questions
 - Perception
 - Experiment 1:** pragmatic meaning
 - Experiment 2:** sentence type
- ❖ Sum up

Variation in EP (continental)



❖ 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

Previous work on EP prosody

- ❖ Viana (1987):
 - the first work on the intonation on EP that combines the goal of providing a phonological description with the goal of presenting phonetic evidence for the intonational categories;
 - the first one to deal with the formation of prosodic domains in EP although there is no clear phonological and/or phonetic evidence for the domains proposed.

- ❖ In the 90s:
 - several authors have mainly described the intonation of declaratives (Frota 1993, 2000; Falé 1995; Vigário 1997, 1998; Frota & Vigário 2000);
 - work on the prosodic structure of EP where segmental, durational and intonational evidence for phrasing are discussed (Frota 1993, 1996, Ellison & Viana 1996, Vigário 1997, 1998).

Previous work on EP prosody

- ❖ Last decade:
 - emergence of crucial analyses considering typology of pitch accents and edge tones, association and alignment of tonal events with the segmental string and scaling (Frota 1997b, 2000, 2002a, b, 2003; Grønnum & Viana 1999; Frota et al. 2007);
 - the effects of focus; prosodic phrasing above the word level (Frota 2000, 2002c);
 - PW and the phrasing between the word and the PhP (Vigário 2003).
- ❖ More recently:
 - extension of the analysis to other sentence types, namely intonation of questions, imperatives and calling contours, and to different varieties of Portuguese (Frota 2002b; Frota & Vigário 2000, 2007; Tenani 2002; Vigário & Frota 2003; Fernandes 2007; Cruz 2010);
 - interaction between syntactic and prosodic factors (Elordieta, Frota & Vigário 2005, Frota & Vigário 2007).

Prosodic features of SEP

- ❖ **Phrasing** - Intonational Phrase (IP) is the strongest constituent of the prosodic hierarchy (Vigário 1998, Frota 2000, 2003). Differently from the Phonological Phrase (PhP) – immediately below IP – the IP is the domain for:
 - *sandhi* phenomena (fricative voicing, vowel deletion, etc.);
 - pre-boundary lengthening;
 - its edge is the locus for potential occurrence of pauses;
 - minimal tune:
 - (i) only the IP-head must be pitch-accented (NPA) and only its right-edge requires tonal boundary marking;
 - (ii) its left edge is optionally signalled by an initial H tone.

Prosodic features of SEP

- ❖ **IP mapping (syntax-prosody):** 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.
- ❖ **Tonal density:** only 17-27% of IP-internal stressed syllables are pitch accented – corpus of utterances with 3 to 8 PWs (Vigário & Frota 2003).
- ❖ **Intonational typology (nuclear contours)**

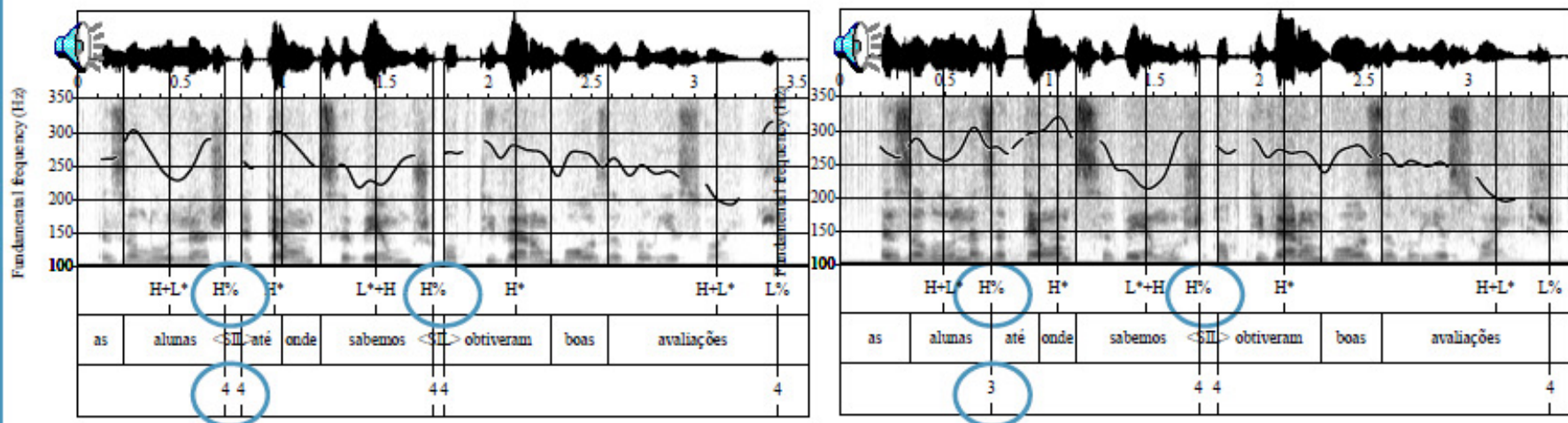
Variety	Declarative		Wh- question	Yes-No question	
	Broad Focus	Narrow Focus		Broad Focus	Narrow Focus
SEP	H+L* Li	H*+L	H+L* Li or LHi	H+L* LHi	L*+H HLi or LHi

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

Prosodic structure (relevant to intonation)

- ❖ Dissociation between boundary type (constituent) and BI (level of phrasing): **1 level of constituency** (but **possibly 2 of phrasing**, in compound phrases) \neq **Cat_ToBI**: 2 levels of constituency (and phrasing – ip and IP).

Compound phrasing (Ladd 1996, Frota 2000, Moniz 2010, a.o)



One type of constituent signalled by the same kind of cues:

Figure1 – Neutral declarative (with parenthetical) in SEP (Frota 2010, Workshop on Cat_ToBI).

Prosodic variation in EP: NEP (Braga)

- ❖ Studies on prosodic variation in EP are still incipient. Besides Standard European Portuguese (SEP), only a Northern variety from the region of Braga (NEP) was investigated by Vigário & Frota (2003). The authors have compared both varieties and they have shown that:
 - the two varieties are intonationally different (although narrow focus remains to be analyzed in NEP);

Variety		Declarative		Wh- question	Yes-No question	
		Broad Focus	Narrow Focus		Broad Focus	Narrow Focus
NEP	most freq.	L* Li	---	L* Li	L* H- Li	---
	alternative	---	---	H+L* Hi	H+L* Li	---

Table 2 – Declarative and Question nuclear contours (with broad focus) in NEP.

- intonational phrasing is a further dimension of variation – in NEP declaratives usually form 2 IPs [(S) (VO)];
- there is a prosodic similarity between NEP and Spanish (and other Romance languages).

Preliminary data on 2 Southern varieties: **Production**

- ❖ Geographical distribution:
 - Beja district (1 area → Castro Verde)



Preliminary data on 2 Southern varieties: **Production**

- ❖ Geographical distribution
 - Faro district (1 area → Albufeira)



Preliminary data on 2 Southern varieties: **Production**

- ❖ Our goals:
 - to provide a description of the intonation of...
 - ... declaratives (with broad and narrow focus);
 - ... yes-no questions (with broad and narrow focus);
 - ... wh-questions;
 - ... calling contours;

2 Southern varieties (ALE – Alentejo and ALG – Algarve)

- ❖ Parameters analysed:
 - intonational typology
 - tonal density per sentence type
 - specific tonal events

Preliminary data on 2 Southern varieties: **Production**

❖ Speakers:

- 2  from ALE
 - 2  from ALG
- } 25-35 years old

❖ *Corpus* (Frota 2000; D'Imperio, Elordieta, Frota, Prieto & Vigário 2005): 34 sentences (33 IPs/85 PhPs) read in random order (3x) manipulated in terms of:

- sentence type;
- pragmatic mean (broad and narrow focus);
- length;
- stress position in the nuclear word controlled for both types of questions.

Sentence Type	Length	Pragmatic Mean
Declarative	Non-branching <u>SSS</u>	Broad and Narrow Focus
	Non-branching <u>LLL</u>	
	Non-branching <u>SLL</u>	
	Non-branching <u>LSS</u>	
	Non-branching <u>LLS</u>	
	L double branch N-AP-PP <u>SS</u>	
	L double branch N-AP-PP <u>LL</u>	
	L double branch N-AP-PP <u>SL</u>	
	L double branch N-AP-PP <u>LS</u>	
	L double branch N-AP-PP L N-AP-PP	Broad Focus

Preliminary results on 2 Southern varieties: **Production**

ALE

Declarative with broad focus

ALG

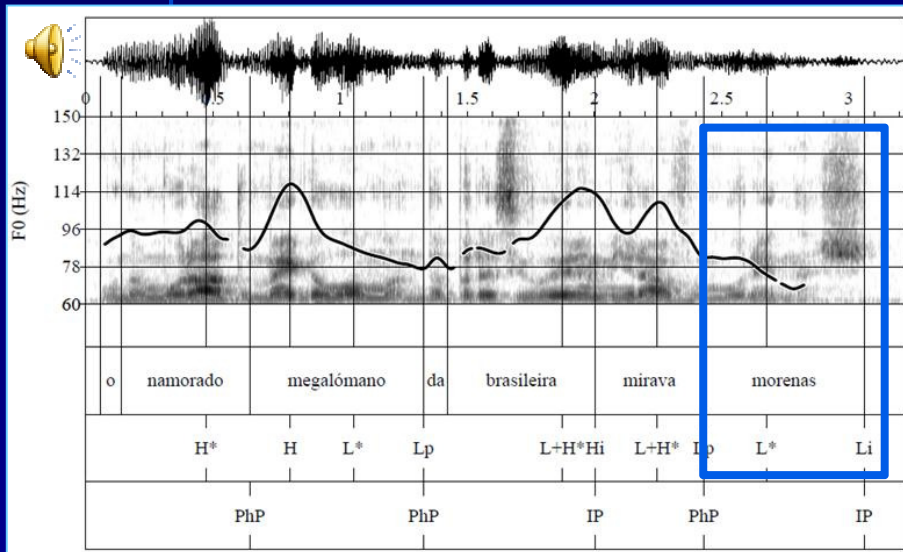


Figure 2 - Declarative with broad focus (long subject) in ALE. 'The Brazilian girl megalomaniac boyfriend looked at the dark-haired women'.

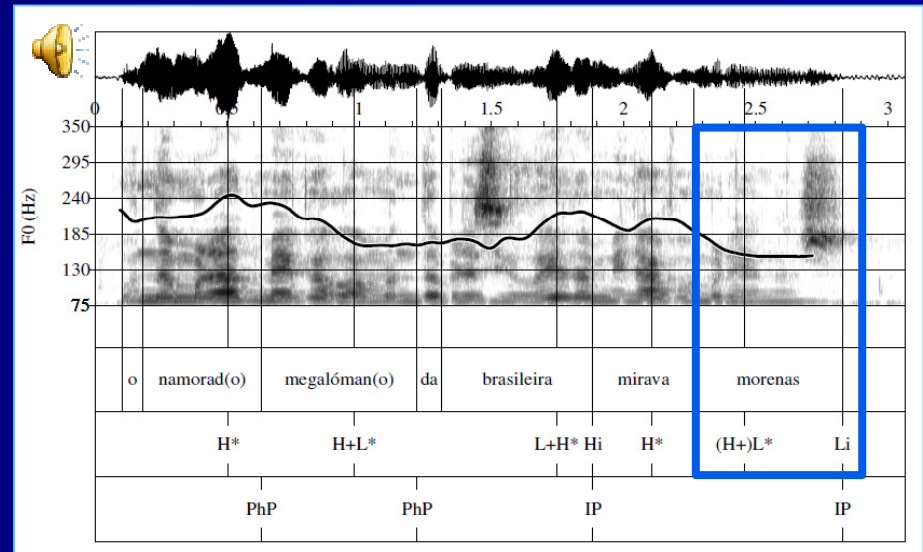


Figure 3 – Declarative with broad focus (long subject) in ALG. 'The Brazilian girl megalomaniac boyfriend looked at the dark-haired women'.

ALE -> L* Li (= NEP)

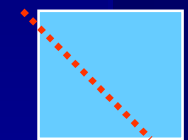
ALG -> (H+)L* Li
(≠ SEP e ≠ NEP)

Preliminary results on 2 Southern varieties: **Production**

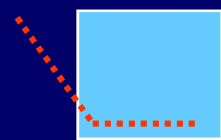
Declarative with broad focus

SEP

ALG



H+L*



(H)+L*

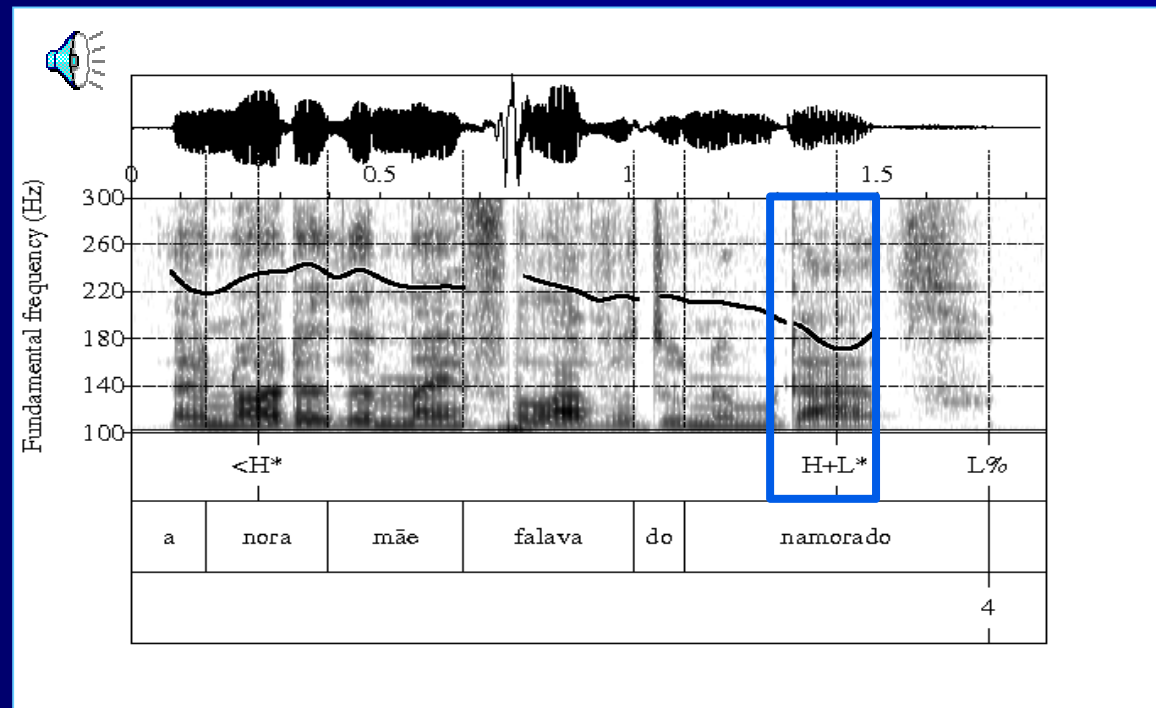


Figure 4 – Declarative with broad focus (long subject) in SEP (Viana & Frota 2007). ‘The daughter-in-law of mother talked about the boyfriend’.

SEP -> H+L* Li

Preliminary results varieties: Product

ALE

Yes-No question

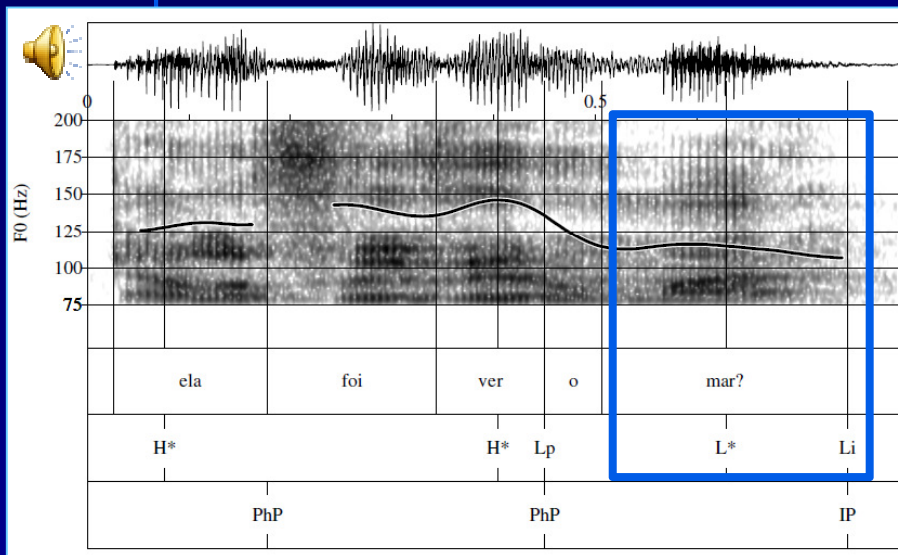


Figure 5 – Yes-No question with broad focus in ALE (N). 'Has she gone to see de sea?'

ALE -> L* Li
(= neutral declarative)

SEP

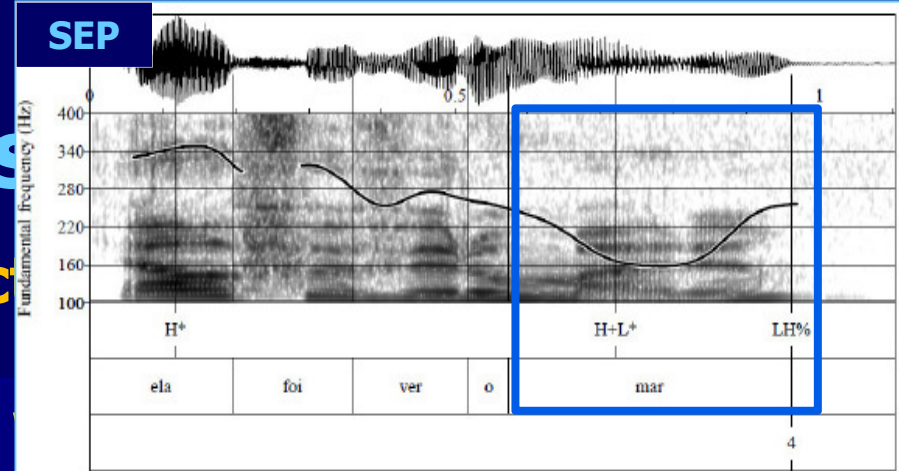


Figure 6 – Yes-No question with broad focus in ALG (H). 'Has she gone to see de sea?'

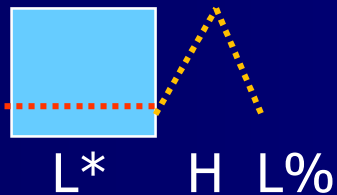
ALG -> L*+H HLi
(≠ SEP -> H+L* LHⁱ)

Preliminary results on 2 Southern varieties: **Production**

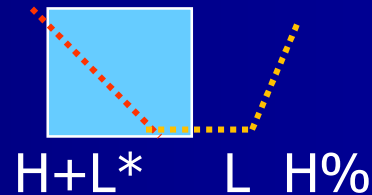
Yes-No question with broad focus

- ❖ Nuclear contours and boundary tones

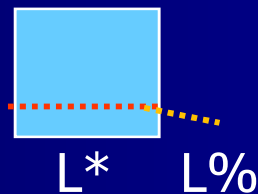
NEP



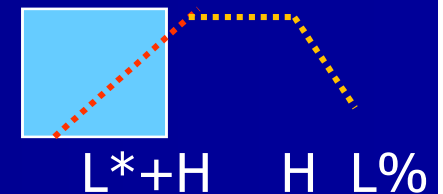
SEP



ALE



ALG



Neutral declarative



Preliminary results on 2 Southern varieties: **Production**

ALE

Wh- question

ALG

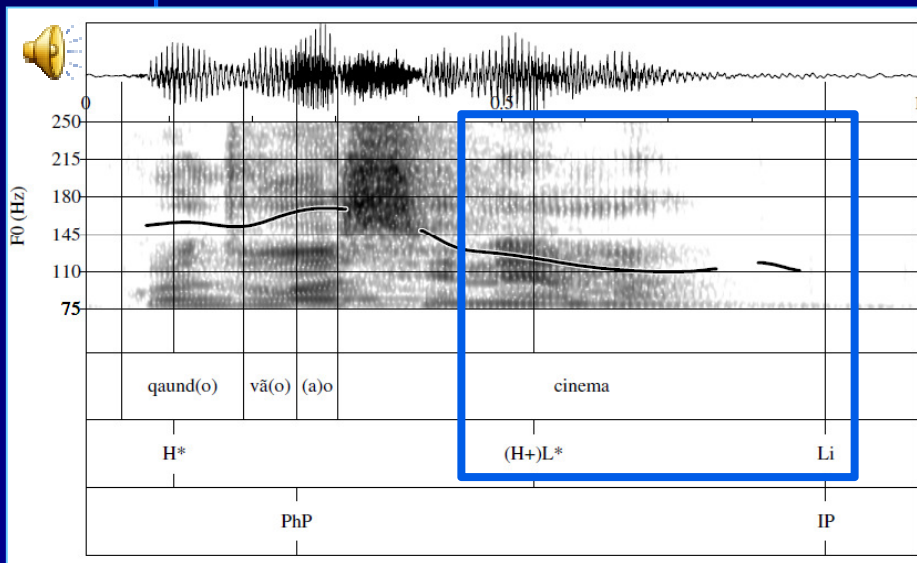


Figure 7 – Wh- question in ALE (N). ‘When do you go to the cinema?’

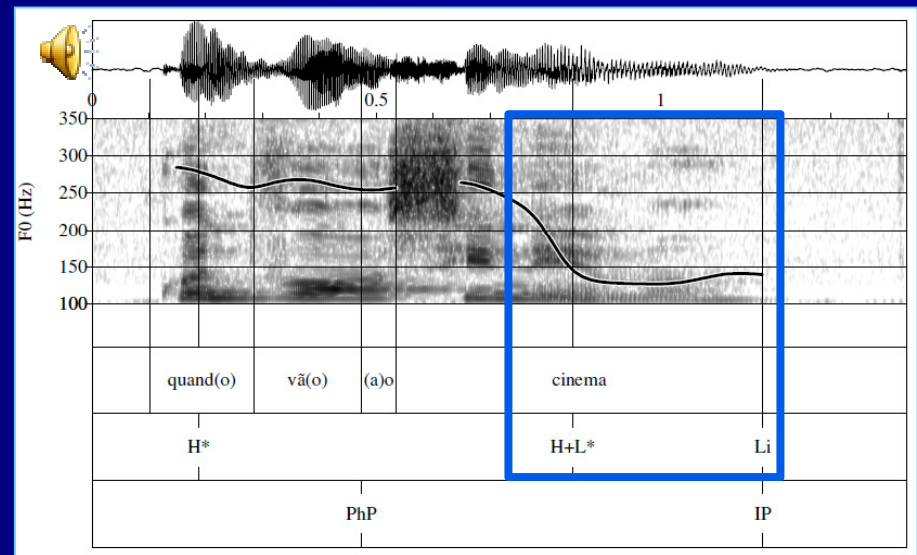


Figure 8 – Wh- question in ALG (H). ‘When do you go to the cinema?’

ALE -> (H+)L* Li
(≠ SEP -> H+L* Li)

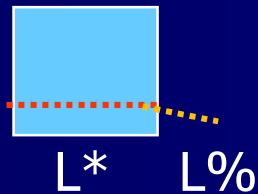
ALG -> H+L* Li
(= SEP -> H+L* Li)

Preliminary results on 2 Southern varieties: **Production**

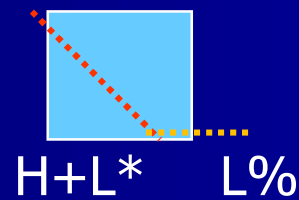
Wh- question

- ❖ Nuclear contours and boundary tones

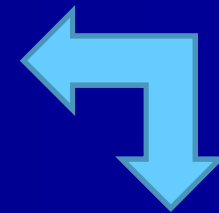
NEP



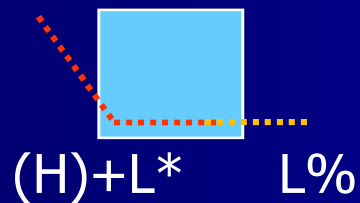
SEP



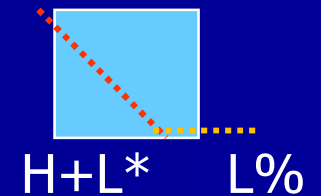
=



ALE



ALG



Preliminary results on 2 Southern varieties: **Production**

ALE

Declarative with narrow focus

ALG

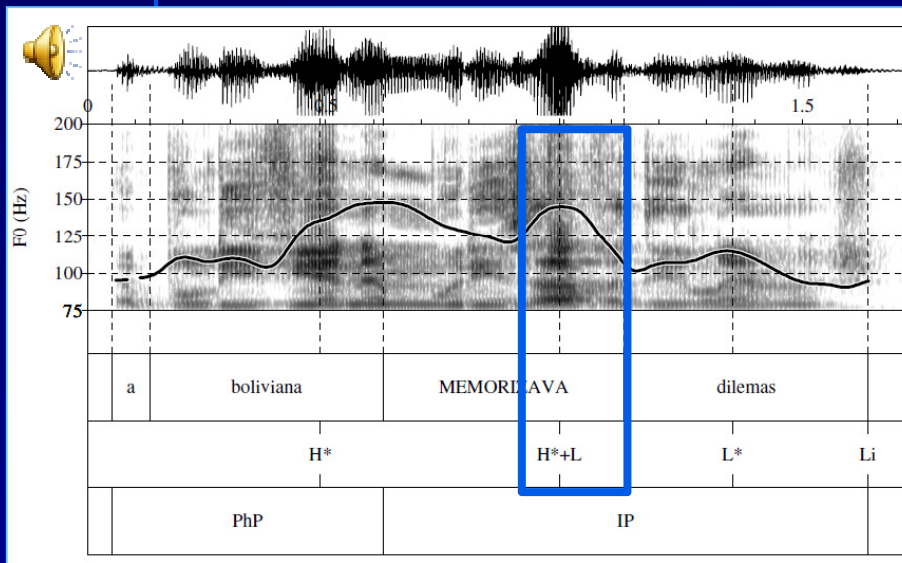


Figure 9 – Declarative with narrow focus in ALE (N). ‘The Bolivian girl MEMORIZED dilemmas’.

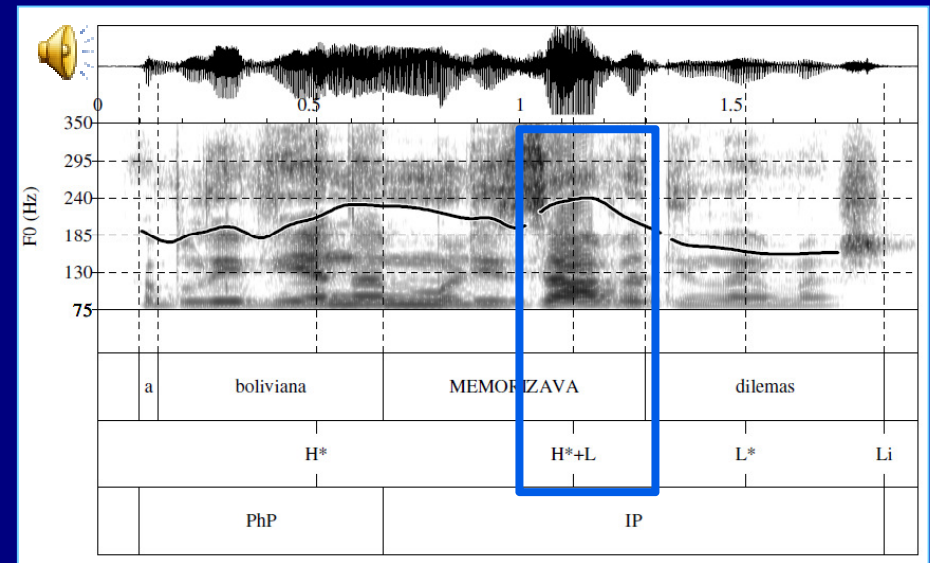
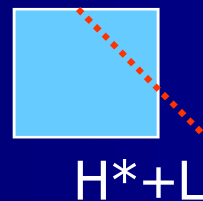


Figure 10 – Declarative with narrow focus in ALG (C). ‘The Bolivian girl MEMORIZED dilemmas’.

ALE -> H*+L
(= SEP -> H*+L)



ALG -> H*+L
(= SEP e ALE)

Preliminary results on 2 Southern varieties: **Production**

ALE

Focused Yes-No question

ALG

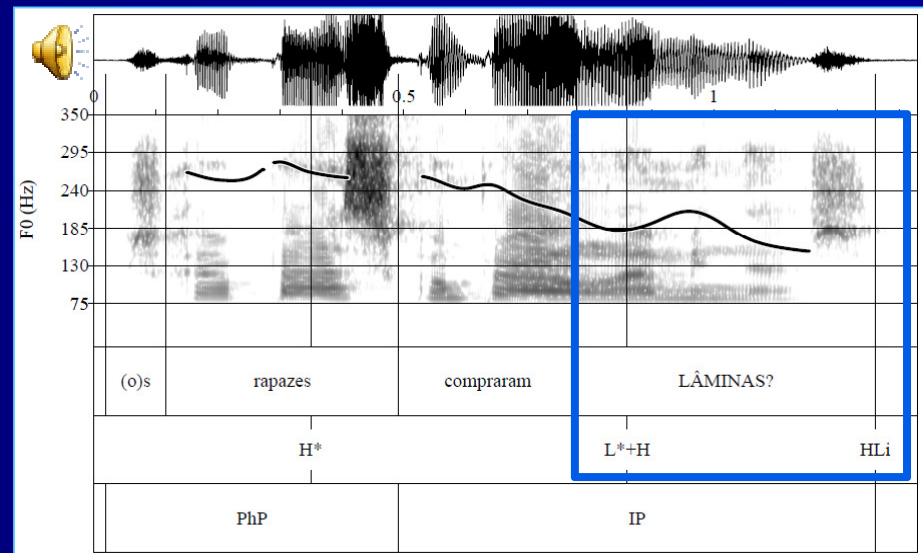
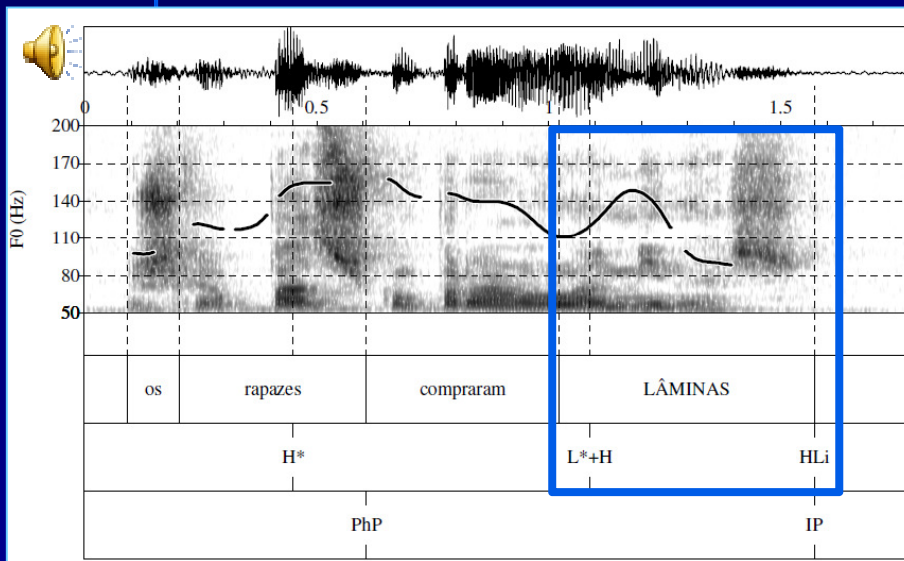
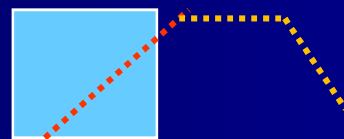


Figure 11 – Focused yes-no question in ALE (D). ‘Did the boys buy SLIDES (for the microscope)?’

Figure 12 – Focused yes-no question in ALG (C). ‘Did the boys buy SLIDES (for the microscope)?’

ALE -> L*+H HLi
(= SEP e = ALG)



L*+H H L%

ALG -> L*+H HLi
(= SEP e = ALE)

Preliminary results on 2 Southern varieties: **Production**

ALE

Calling contour

ALG

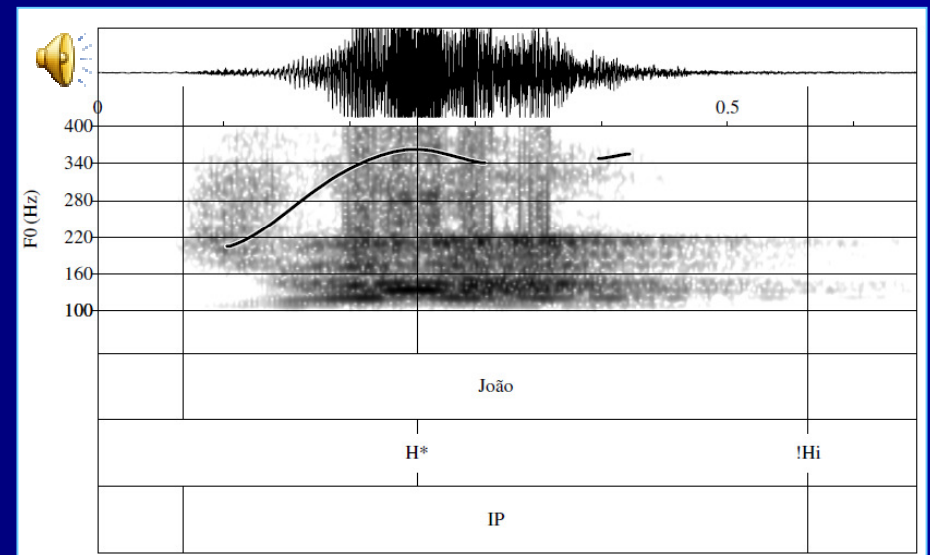
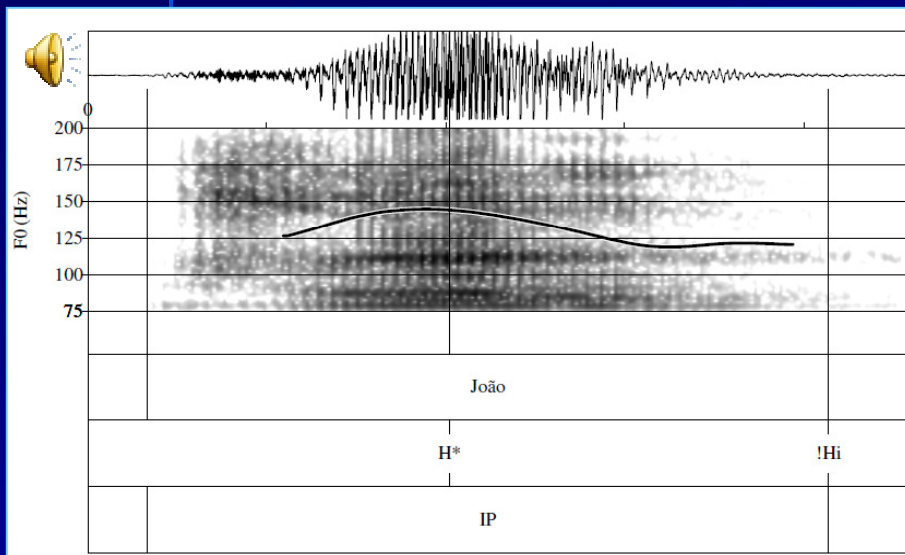
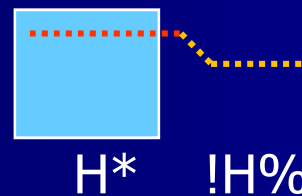


Figure 13 – Calling contour in ALE (D). 'John!'

Figure 14 – Calling contour in ALG (C). 'John!'

ALE -> H* !Hi
(= SEP e = ALG)



H* !H%

ALG -> H* !Hi
(= SEP e = ALE)

Preliminary results on 2 Southern varieties: **Production**

❖ Tonal density per sentence type

ALE

%PA/PW	N	D
Declarative	95%	117%
Yes-No question	44%	0%
Wh- question	48%	19%

Table 3 – Pitch Accent distribution per sentence type, in ALE. PA = excluding nuclear PAs and initial peaks.

ALE \approx 1 PA per non-nuclear PW
(= NEP e \neq SEP)

ALG

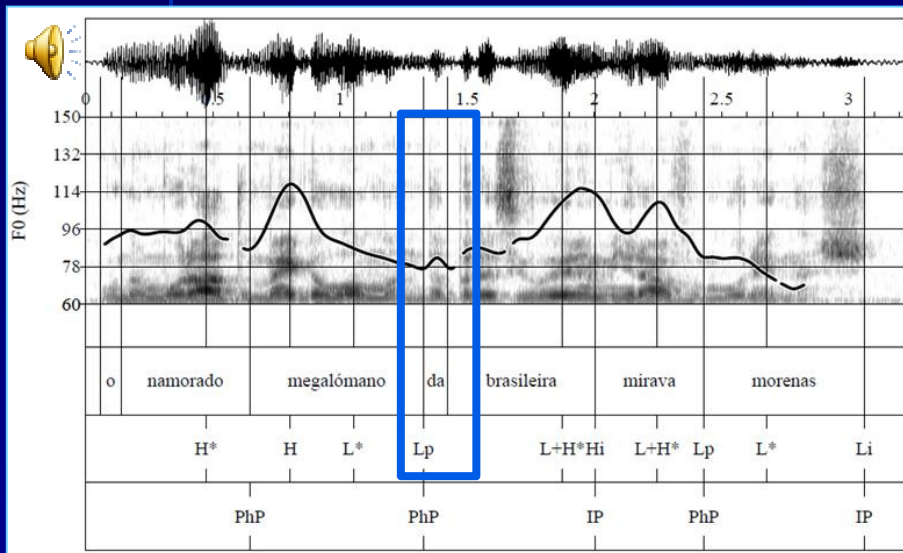
%PA/PW	C	H
Declarative	87%	87%
Yes-No question	0%	6%
Wh- question	0%	0%

Table 4 – Pitch Accent distribution per sentence type, in ALG. PA = excluding nuclear PAs and initial peaks.

ALG \rightarrow sparse distribution in questions (= SEP), but dense in declaratives (= NEP e = ALE)

Preliminary results on 2 Southern varieties: **Production**

ALE



There is a variety specific tonal event (Lp), which signals the left edge of the last PhP of the IP (even when a sentence is composed by 2 IPs). It may also occur in the left edge of both the penult and the last PhPs of the IP.



Figure 2 - Declarative with broad focus (long subject) in ALE (D). 'The Brazilian girl megalomaniac boyfriend looked at the dark-haired women'.

Specific tonal event (Lp).
ALE ≠ SEP e ≠ NEP

ALG

No evidence for Lp occurrence.
ALG = SEP e ≠ ALE

Preliminary results on 2 Southern varieties: from production to perception

- Declarative:

$L^* Li$ (ALE)

$(H+)L^* Li$ (ALG)

- Yes-No question:

$L^* Li$ (ALE)

$L^*+H HLi$ (ALG)

SEP: will it be difficult to distinguish between declaratives and yes-no questions produced by speakers from ALE?

- Decl. with narrow focus:

H^*+L (ALE, ALG e SEP)

- Focused yes-no question:

$L^*+H HLi$ (ALE, ALG e SEP)

SEP: will it be difficult to distinguish between neutral and yes-no questions produced by speakers from ALG?

Preliminary results on 2 Southern varieties: Perception

❖ Methodology

- 29 sentences (wh- questions were excluded), randomized (3x);
- 13 listeners from SEP;
- 2 experiments.

Experiment 1:

- listeners were indirectly asked to distinguish between **broad and narrow focus**: they had to choose the most adequate written context - neutral (A) or contrastive (B) - for each sentence they listened to. A and B did not correspond always to the same pragmatic meaning.

Experiment 2:

- listeners were directly asked to distinguish between declaratives and questions : A (declarative), B (interrogative), C (I don't know).

Preliminary results on 2 Southern varieties: Perception

❖ Experiment 1: pragmatic meaning (broad vs. narrow focus)

Variety/Speaker	Focus						Neutral					
	Decl.	%	Interr.	%	Total	%	Decl.	%	Interr.	%	Total	%
ALE_N	194	55%	122	63%	316	58%	303	78%	122	63%	425	73%
ALE_D	312	89%	64	33%	376	69%	343	88%	144	74%	487	83%
ALE_total	506	72%	186	48%	692	63%	646	83%	266	68%	912	78%
ALG_C	176	50%	50	26%	226	41%	337	86%	124	64%	461	79%
ALG_H	185	53%	67	34%	252	46%	350	90%	134	69%	484	83%
ALG_total	361	51%	117	30%	478	44%	687	88%	258	66%	945	81%

Table 5 - % of correct responses given by SEP listeners on Experiment 1.

- neutral sentences are easier recognized than focused sentences (focus is not identified in ALG);
- both pragmatic meanings are easier detected in declaratives.

Preliminary results on 2 Southern varieties: Perception

❖ Experiment 2: sentence type (declarative vs. question)

Variety/Speaker	Declarative						Interrogative					
	Focus	%	Neutral	%	Total	%	Focus	%	Neutral	%	Total	%
ALE_N	330	94%	361	93%	691	93%	82	42%	174	89%	256	66%
ALE_D	346	99%	389	100%	735	99%	186	95%	167	86%	353	91%
ALE_total	676	96%	750	96%	1426	96%	268	69%	341	87%	609	78%
ALG_C	346	99%	389	100%	735	99%	188	96%	163	84%	351	90%
ALG_H	347	99%	388	99%	735	99%	182	93%	182	93%	364	93%
ALG_total	693	99%	777	100%	1470	99%	370	95%	345	88%	715	92%

Table 6 - % of correct responses given by SEP listeners on Experiment 2.

- **declaratives are easier detected** than questions (there are problems with the recognition of questions produced in ALE, but the percentage of correct responses is still big);
- the distinction between sentence types does not depend on the pragmatic meaning.

Summary

❖ **Production:**
Nuclear contours per sentence type:

ALE \approx NEP

ALG \approx NEP/SEP

Tipo frásico	ALE	ALG	NEP	SEP
Declarative with broad focus	L* Li	(H+)L* Li	L* Li	H+L* Li
Declarative with narrow focus	H*+L	H*+L	---	H*+L
Neutral yes-no question	L* Li	L*+H HLi	L* H- Li	H+L* LHi
Wh- question	(H+)L* Li	H+L* Li	L* Li	H+L* Li
Focused yes-no question	L*+H HLi	L*+H HLi	---	L*+H HLi
Calling contour	H* !Hi	H* !Hi	---	H* !Hi

Tonal density per sentence type:

ALG entre NEP e SEP

- ALE: \approx 1 PA/non-nuclear PW in all sentence types;
- ALG: sparse pitch accent distribution in questions but dense in decl.

Specific tonal event:

- ALE: **Lp** (left edge of the last PhP of the IP);
- ALG: no evidence for **Lp** occurrence.

Summary

❖ Perception (SEP):

Pragmatic meaning:

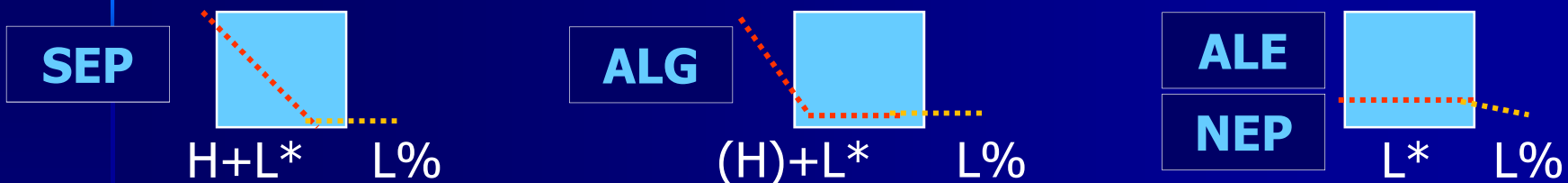
- **broad focus**: easier detected than narrow focus [predicted by production in ALG];
- looking at each pragmatic meaning, **declaratives** are easier recognized than questions.

Sentence type:

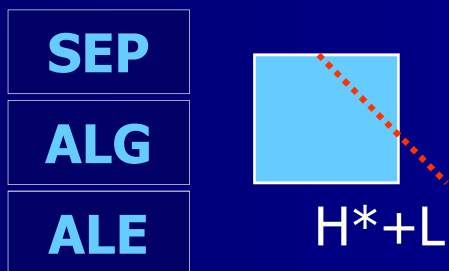
- **declaratives** are easier identified than questions [predicted by production in ALE];
- the distinction between sentence types does not depend on the pragmatic meaning.

ToBI per sentence type, across varieties

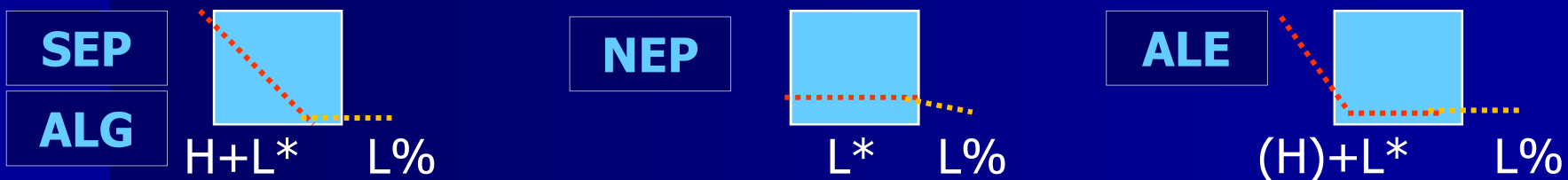
Declarative with broad focus



Declarative with narrow focus

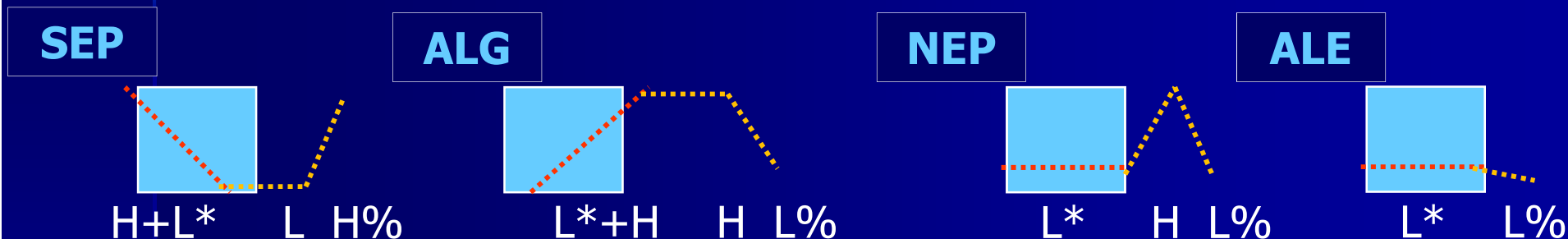


Wh- question

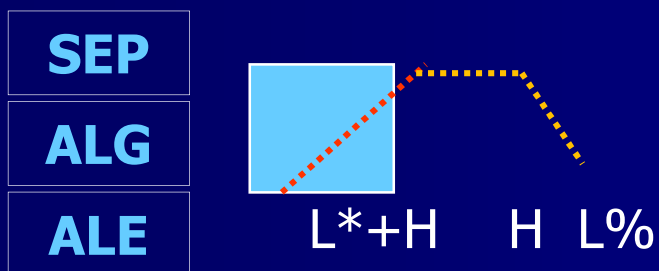


ToBI per sentence type, across varieties

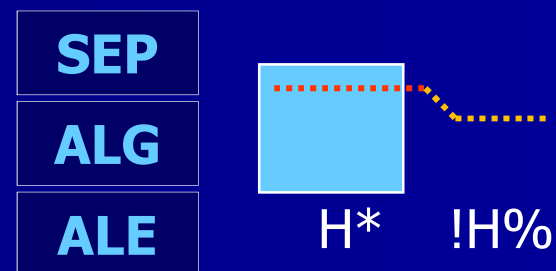
Neutral yes-no question



Focused yes-no question



Calling contour





/ Lab|Flon /



Muito obrigada!

Graciés!



Acknowledgements

- ❖ To Pilar Prieto and her *Grup d'Estudis de Prosòdia (GrEP)* for this excellent opportunity.
- ❖ To Marina Vigário for her precious comments and suggestions.
- ❖ To all participants involved in these preliminary data.

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