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Syllable Structure and Language Typology

- Some Acoustic Evidence from European and Brazilian Portuguese

- Vowel system in EP and BP
- Vowel deletion / vowel epenthesis in BP
- Goal, Data & Method
- Examples
- First results
- Syllable (distribution)
- Resyllabification
- Conclusion and Outlook

stressed

['b^{red}aβ^{red}ɐ]
['k^{red}ɐm^{red}ɐ]

['b^{blue}ɛβ^{blue}i]
['b^{blue}ɛβ^{blue}u]

['b^{red}iβ^{red}liku]

['p^{blue}ɔð^{blue}ɐ]
['p^{blue}o^{blue}su]
['p^{blue}uβ^{blue}liku]

[a]
[ɐ]

[ɛ]
[e]

[i]

[ɔ]
[o]
[u]

unstressed

[ɐ] [b^{red}ɐβ^{red}að^{red}u]
[k^{red}ɐmað^{red}ɐ]

[i] [b^{blue}iβ^{blue}ið^{blue}ɐ]
[b^{blue}iβ^{blue}er]

[i] [b^{red}iβ^{red}liʃt^{red}ɐ]

[u] [p^{blue}uð^{blue}aɾ]
[p^{blue}uð^{blue}er]
[p^{blue}uβ^{blue}liku]



Vowel Neutralisation

Vgl. Mateus & d'Andrade 2000, Vigário 2003, Veloso

2000

stressed

['baβa]

['beβi]

['beβo]

['bibliku]

['poðə]

['poso]

['publiko]

[a]

[ɛ]

[e]

[i]

[ɔ]

[o]

[u]

unstressed

[a] [baβaðo]

[e] [beβiða]

[beβer]

[i] [bi'bliʃtə]

[o] [po'ðar]

[po'ðer]

[u] [pu'bliko]

Vowel Neutralisation

Vgl. Bisol 1999

Post lexical

Mateus & d'Andrade 2000

⇒ no minimal pairs

Lexical

Vigário 2003

- ⇒ great number of exceptions
- ⇒ depends on morphological information
- ⇒ occurs with vowel deletion
- ⇒ before resyllabification

lider [ɛ]

lideranca [ɨ]

lider adorado [ɛ]

1. Diphthongs cf. Mateus & d'Andrade 2000, Vigário 2003
aurícula [a]
2. Vowels of historical CVV
corado [ɔ]
3. Nasal vowels (N in Coda)
campina [ã]
4. Syllables with [ɫ] in coda
delgado [ɛ]
5. Classical loan words [ɛ]
recepção (not in captar, realised as /ɐ/)

„VR seems to apply *without true exceptions* only in post-tonic position“ (Vigário 2003:71)

(Cunha, in progress)

- ⇒ Just in open syllable ((C...)CV)
- ⇒ not CVV and CVC-Syllable (diachronically defined)

Ausnahme:

- -r in pretonic position *per*di*do*
- /s/ in coda *test*ar**

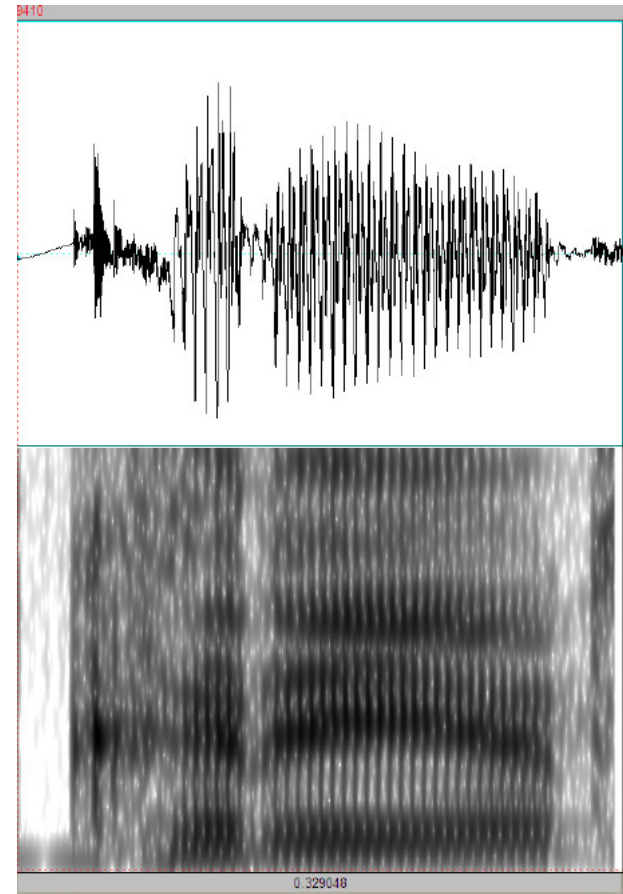
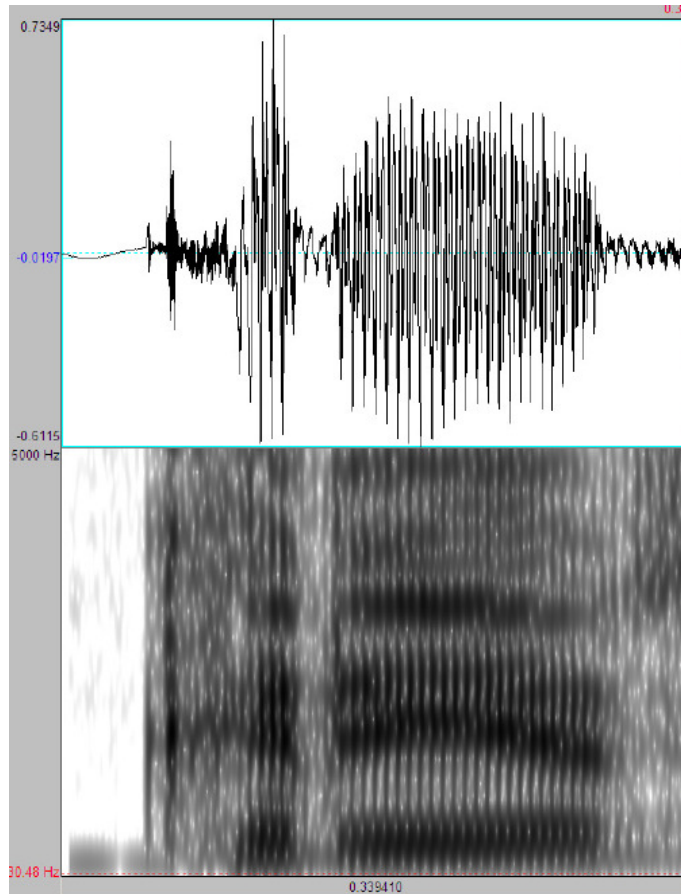
Example

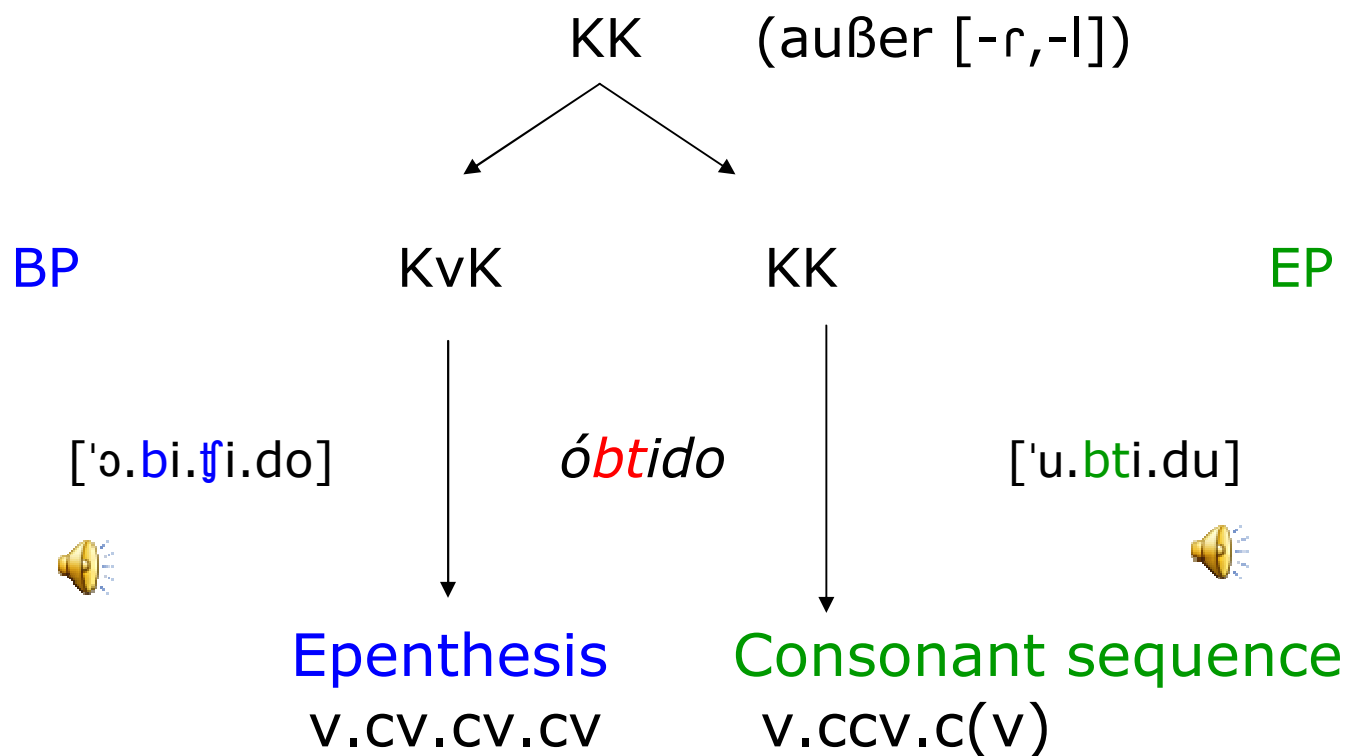
	<i>EP</i>	<i>BP</i>	<i>Syllable</i>
<i>cap<i>ta</i>r</i>	/ɐpit/	/apit/	ca.ptar
<i>factura</i>	/a(k)t/	/at/	fak.tu.ra

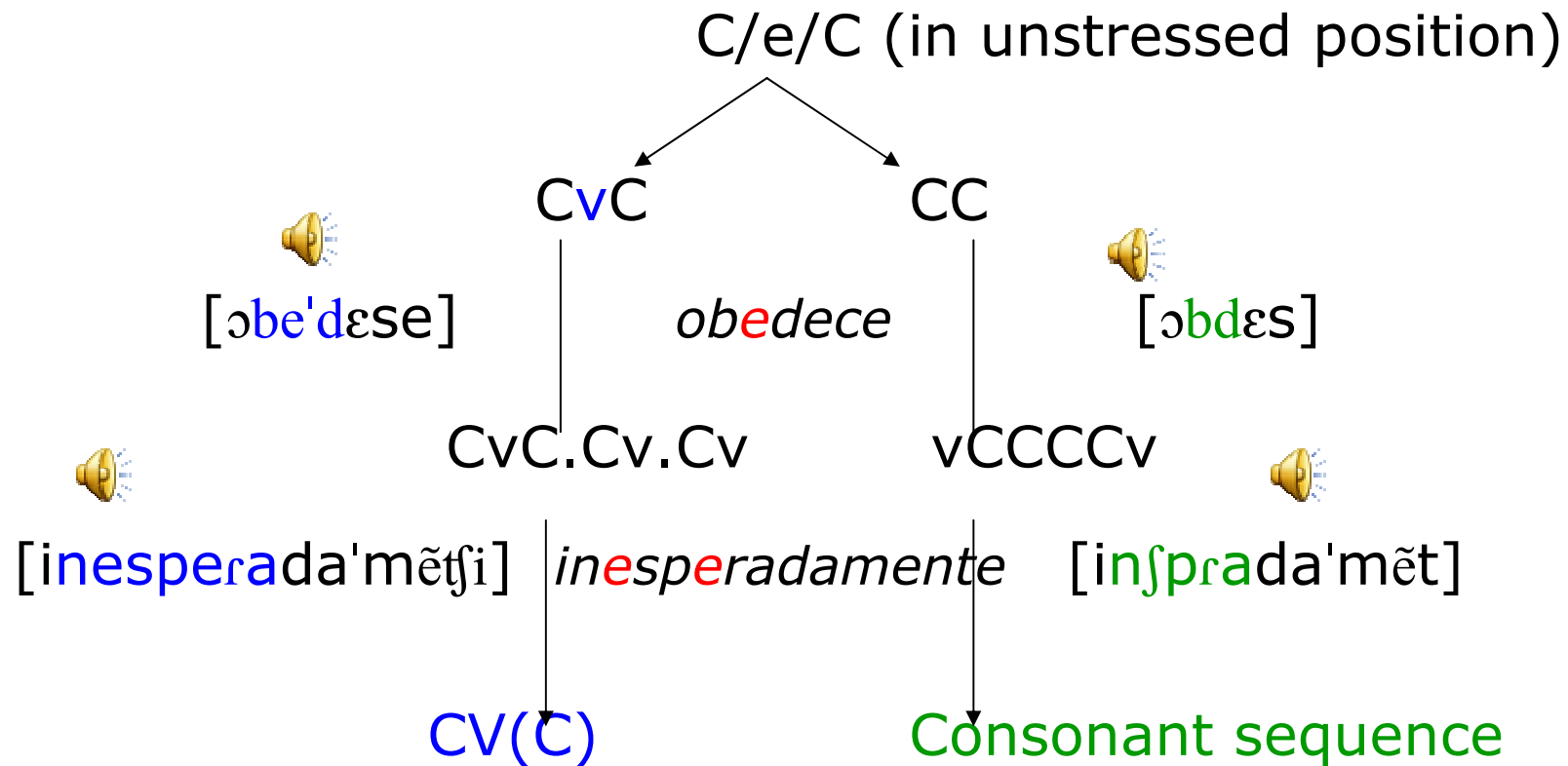
crer 'believe'

[krer]

querer 'want'



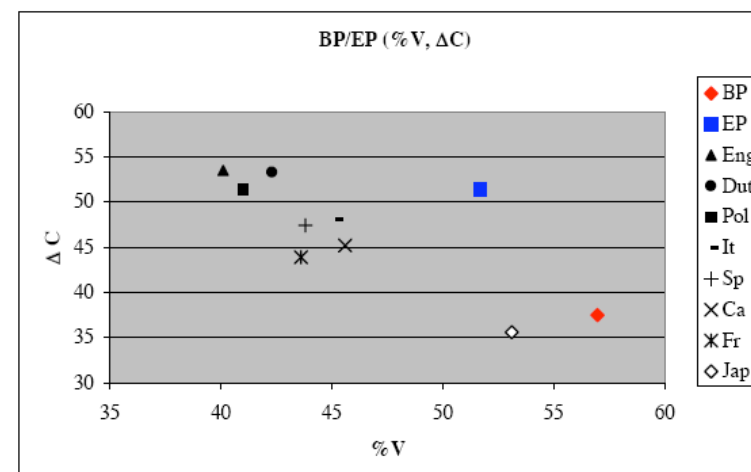
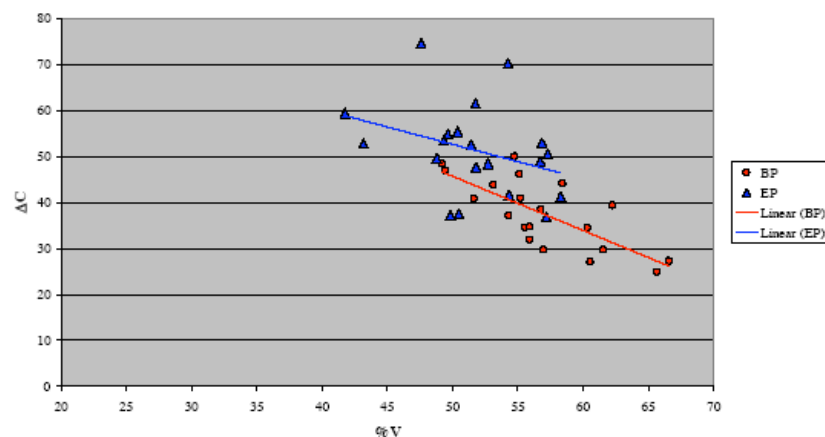




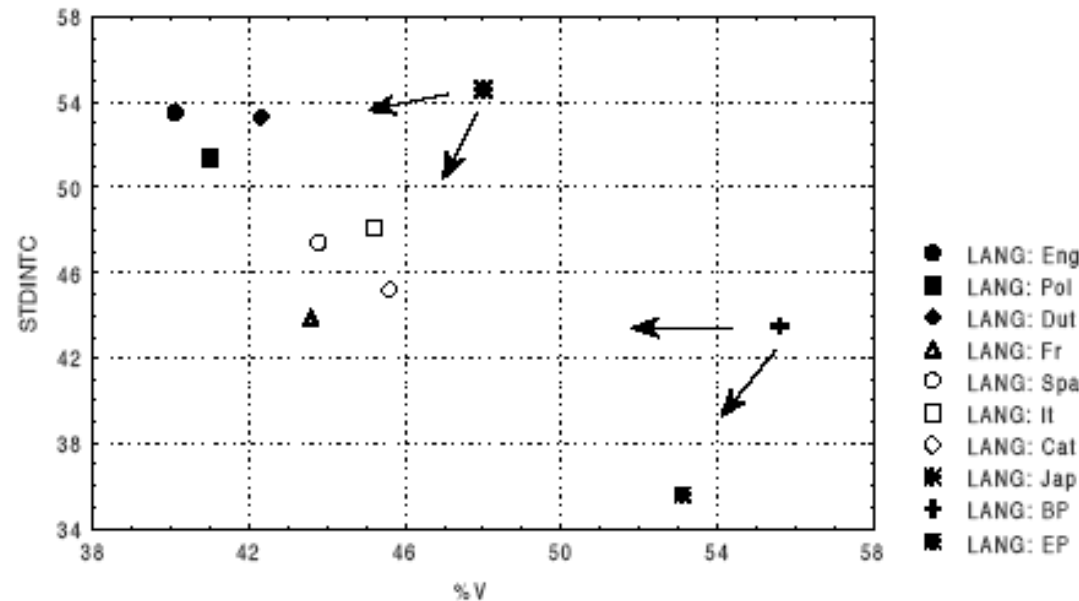
Influence of vowel deletion and vowel epenthesis to the classification of Portuguese in the Word and Syllable Typology?

Previous work

Frota & Vigário, 1999:9,10



Frota & Vigário 2001



BP Syllable Language

EP Syllable Language (phonological syllable structure and L1 Acquisition,

cf. Frota & Vigário (1999, 2001, 2002)

Data

- ⇒ 8 sentences with 2 repetitions
- ⇒ 5 speakers of each variety (EP Porto, BP São Paulo)
- ⇒ 2 speech rates
- ⇒ Speakers has been intructed to prepare the sentences before reading

Method

- ⇒ Acoustic recordings with *Speechrecorder*
- ⇒ Annotation in *Praat*
- ⇒ Imported into *EMU*
- ⇒ Counting in *R* (*EMU-R*)



BPI



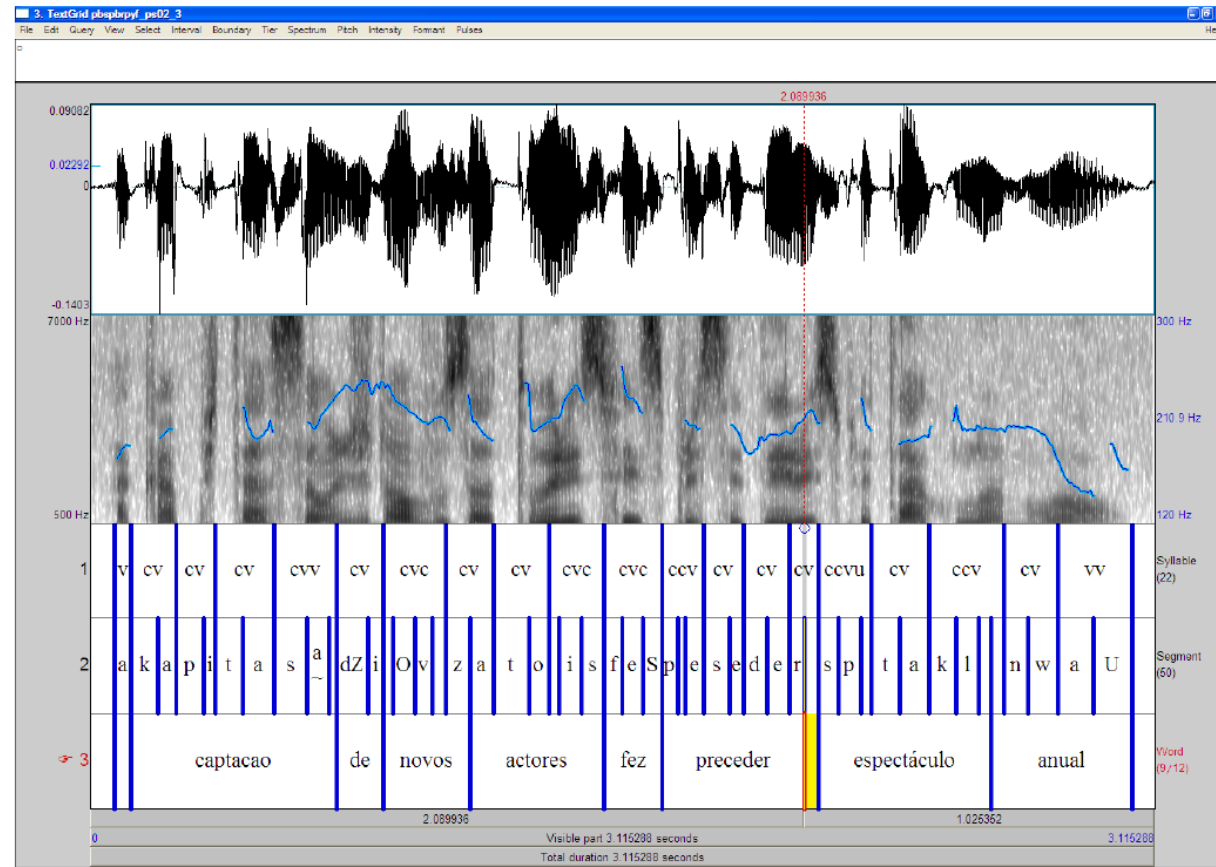
BPa



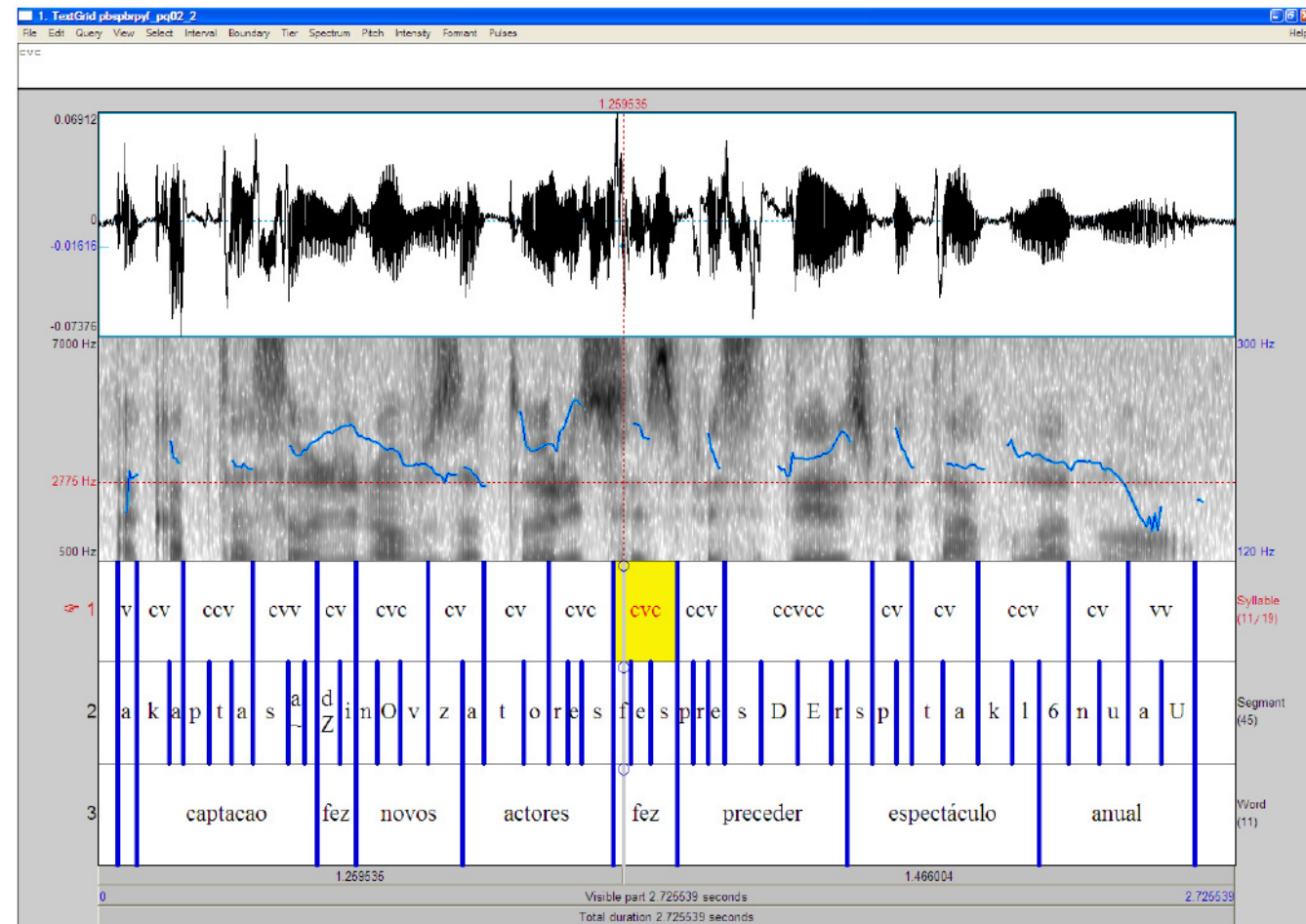
EPI



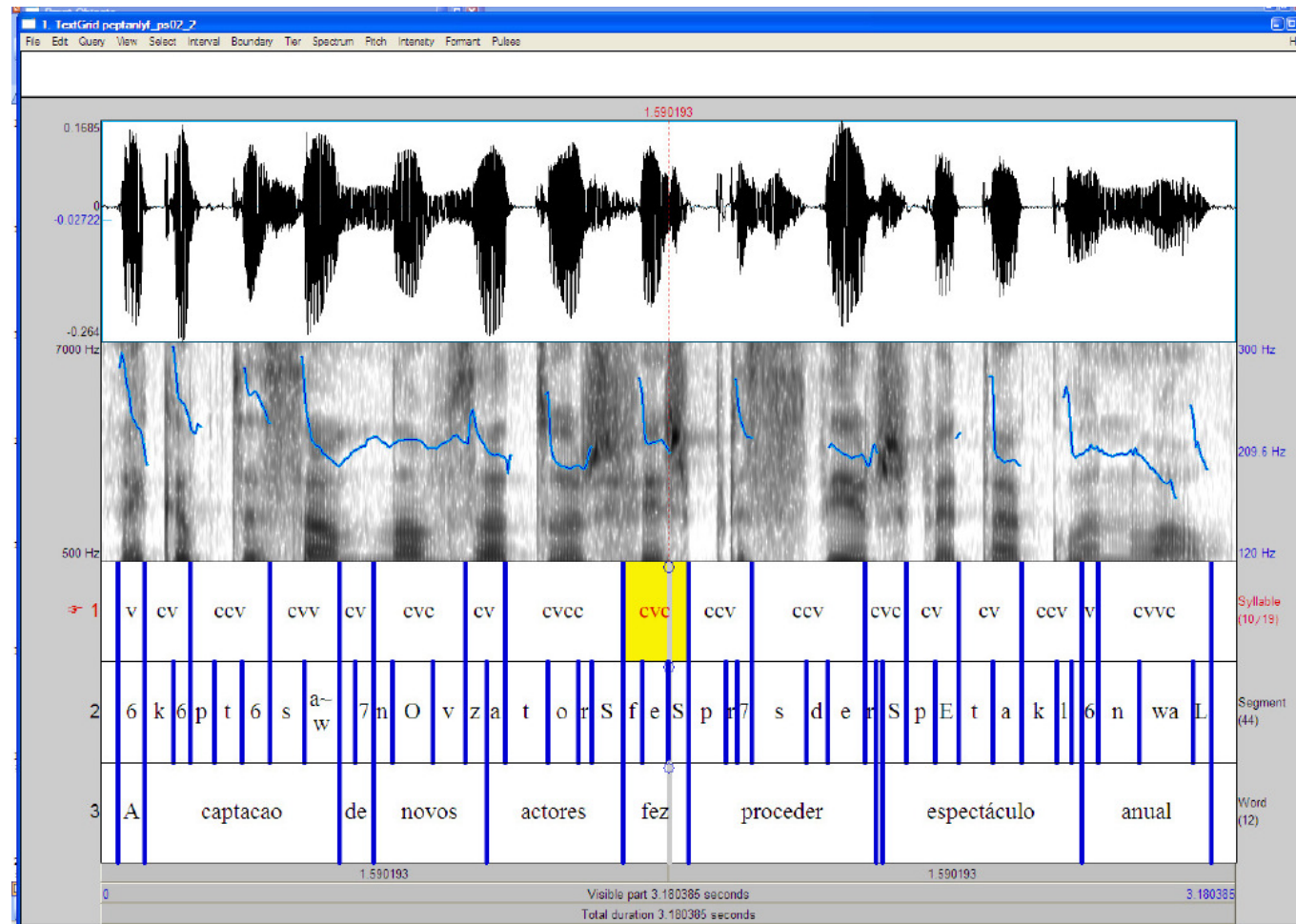
EPa



“The captation of new actors moved the annual show forward”

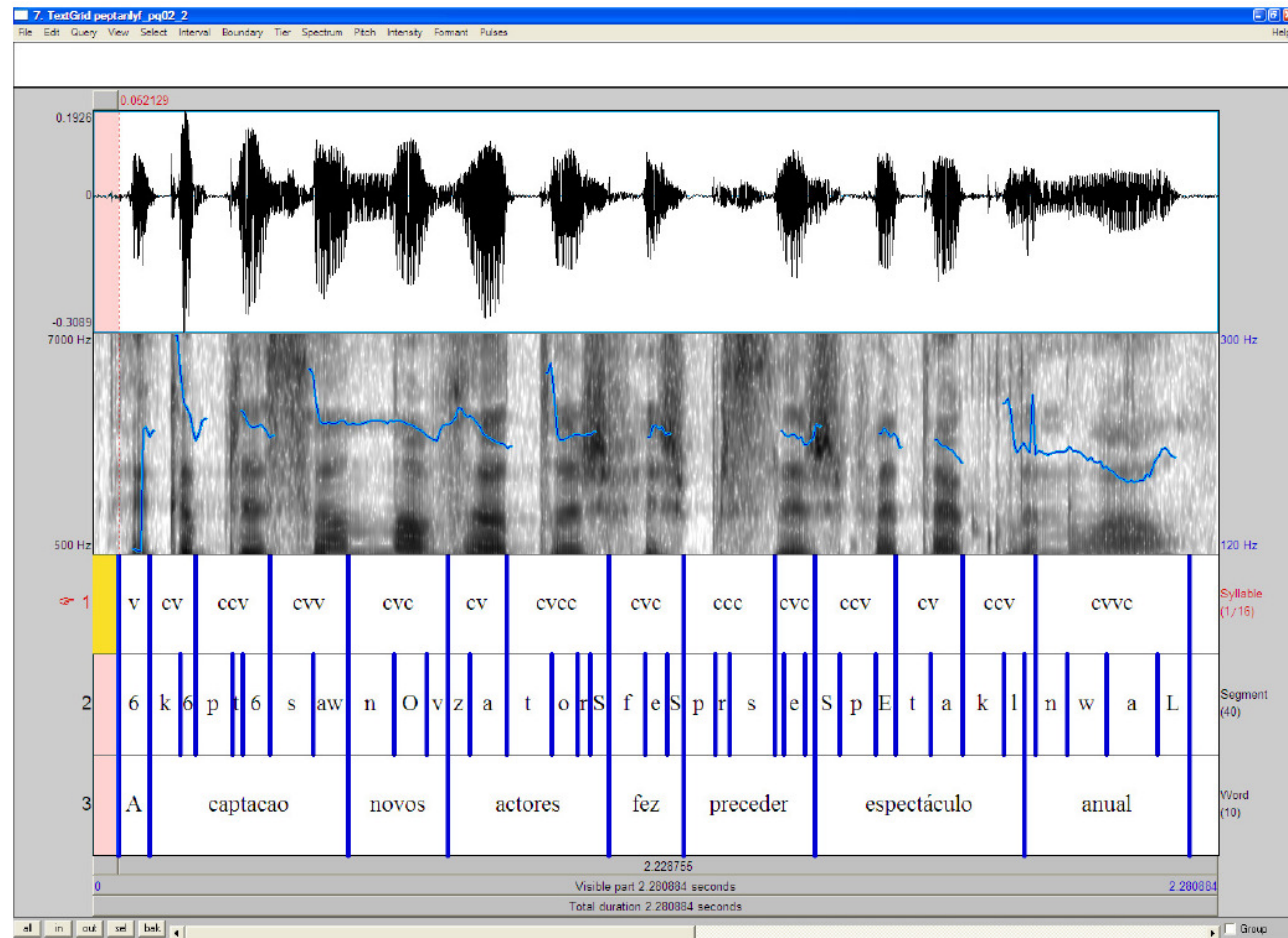


“The captation of new actors moved the annual show forward”



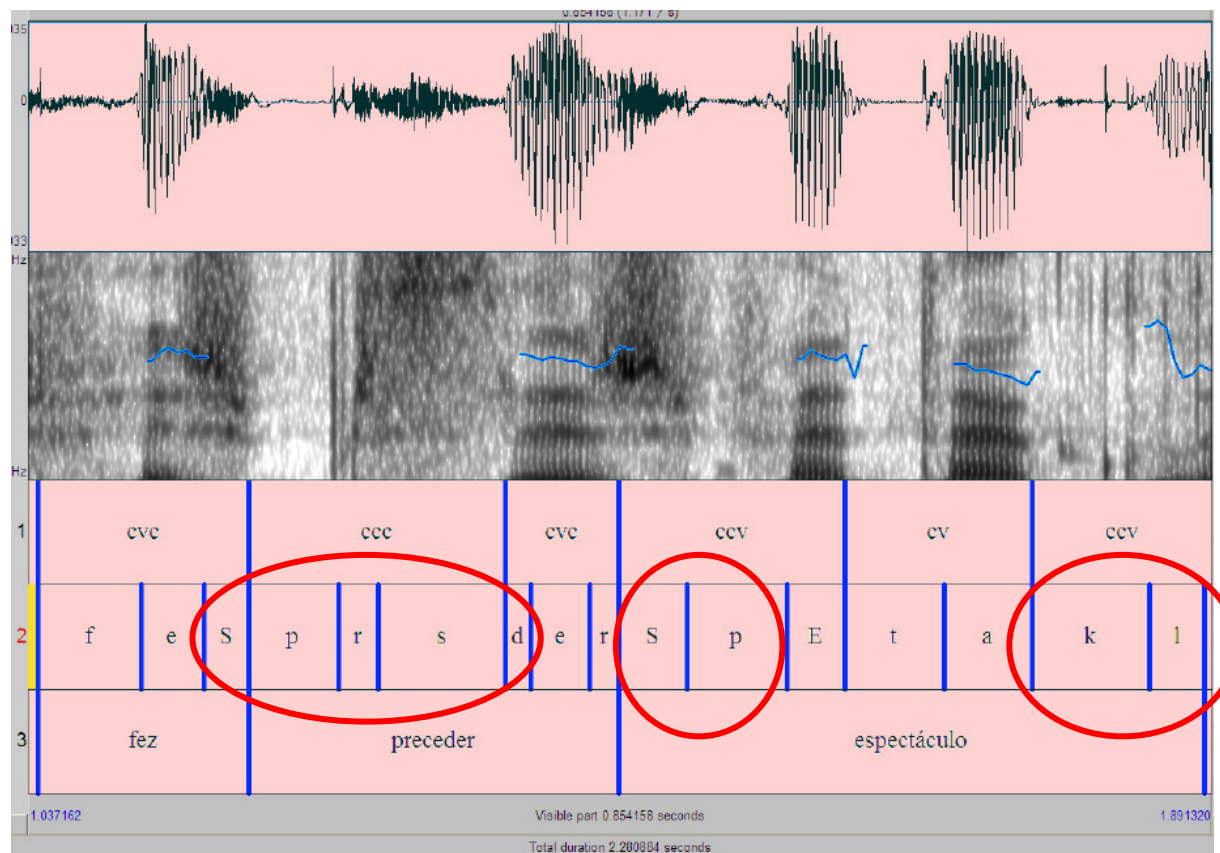
“The captation of new actors moved the annual show forward”

EP *allegro*



“The captation of new actors moved the annual show forward”

Small cut



...fez preceder o espectáculo

"moved the show forward"

First results

Ramus et al 1999, Grabe&Low 2002

percent_v estimates the percentage of vocalic parts

	EP	BP
<i>allegro</i>	34.5	41.2
<i>lento</i>	37.8	48.1

delta_v simply gives us the standard deviation (in ms)
of all summed up vowel cluster durations

	EP	BP
<i>allegro</i>	25	29
<i>lento</i>	41	52

delta_c simply gives us the standard deviation (in ms)
of all summed up consonant cluster durations

	EP	BP
<i>allegro</i>	59	84
<i>lento</i>	61	47

standard deviation

of Delta V

⇒ higher in BP than in EP

- unstressed vowels rather deleted than shortened

of Delta C

⇒ higher in BP allegro

Syllable
























EP

BP

Total: 2348 syllables

	allegro	lento	allegro	lento
CV	221	264	356	423
CCV	102	89	76	58
CCCV	10	4	-	-
CC (-r)	12	10	-	-
CVCC	8	12	-	-

komplex syllables

[tlf]	telefone, telefonar, telefonema	   
[mɾs]	merecer	 
[fvɾ]	fevereiro	
[vɜt]	vegetariano	
[bõs]	obedece, obedecer, obedecido	  
[dpnk]	depenicar	
[dʃpg]	despegar	 
[dʃpɾʃ]	desprestígio, desprestigiar	   
[dʃpɾvn]	desprevenir	 
[pɾʃkrv]	prescrever	 
[pɾsβt]	percebeste	 
[ʃpɾmd]	espremedor	 

in BP and EP (if v

BPI



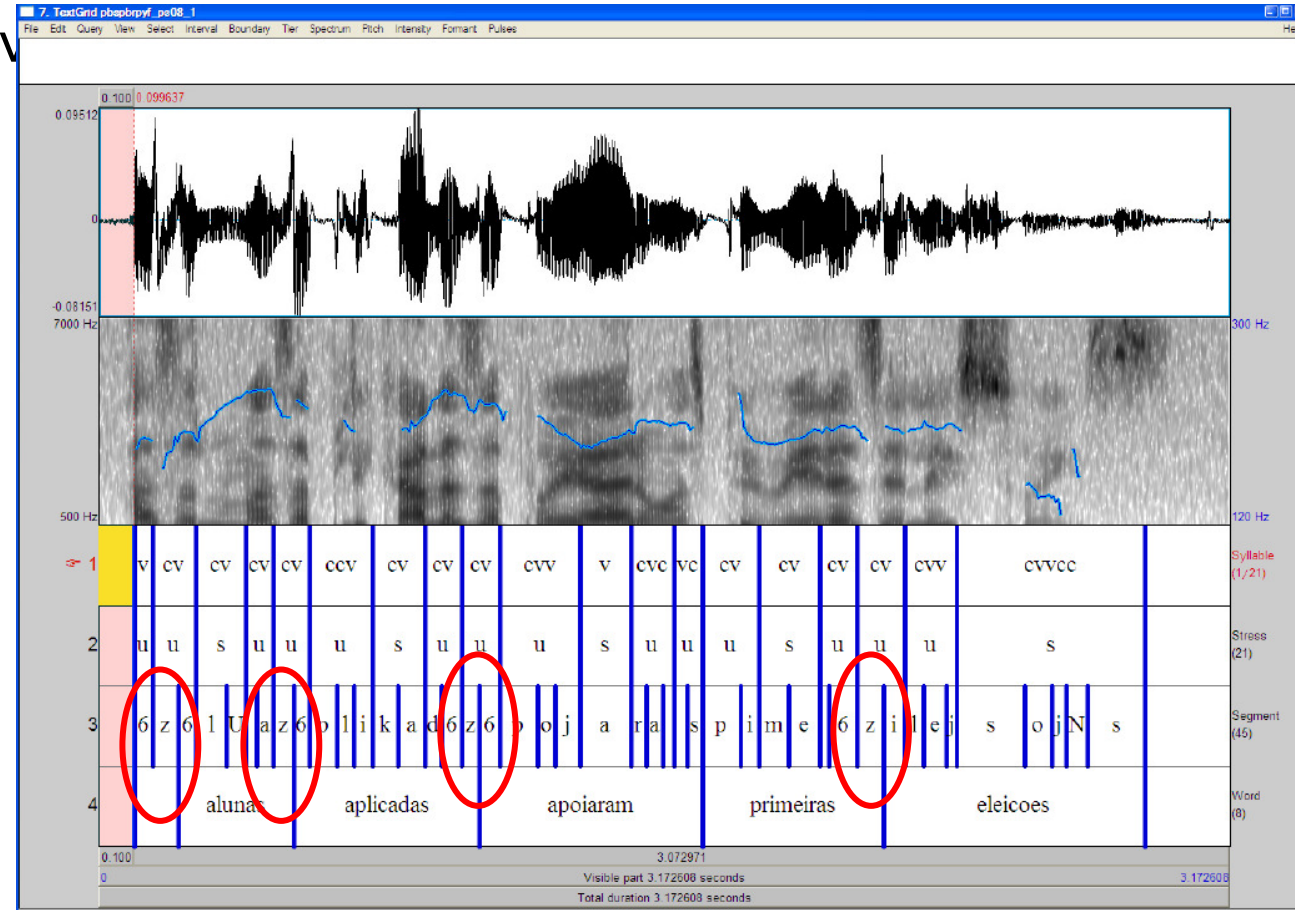
BPa



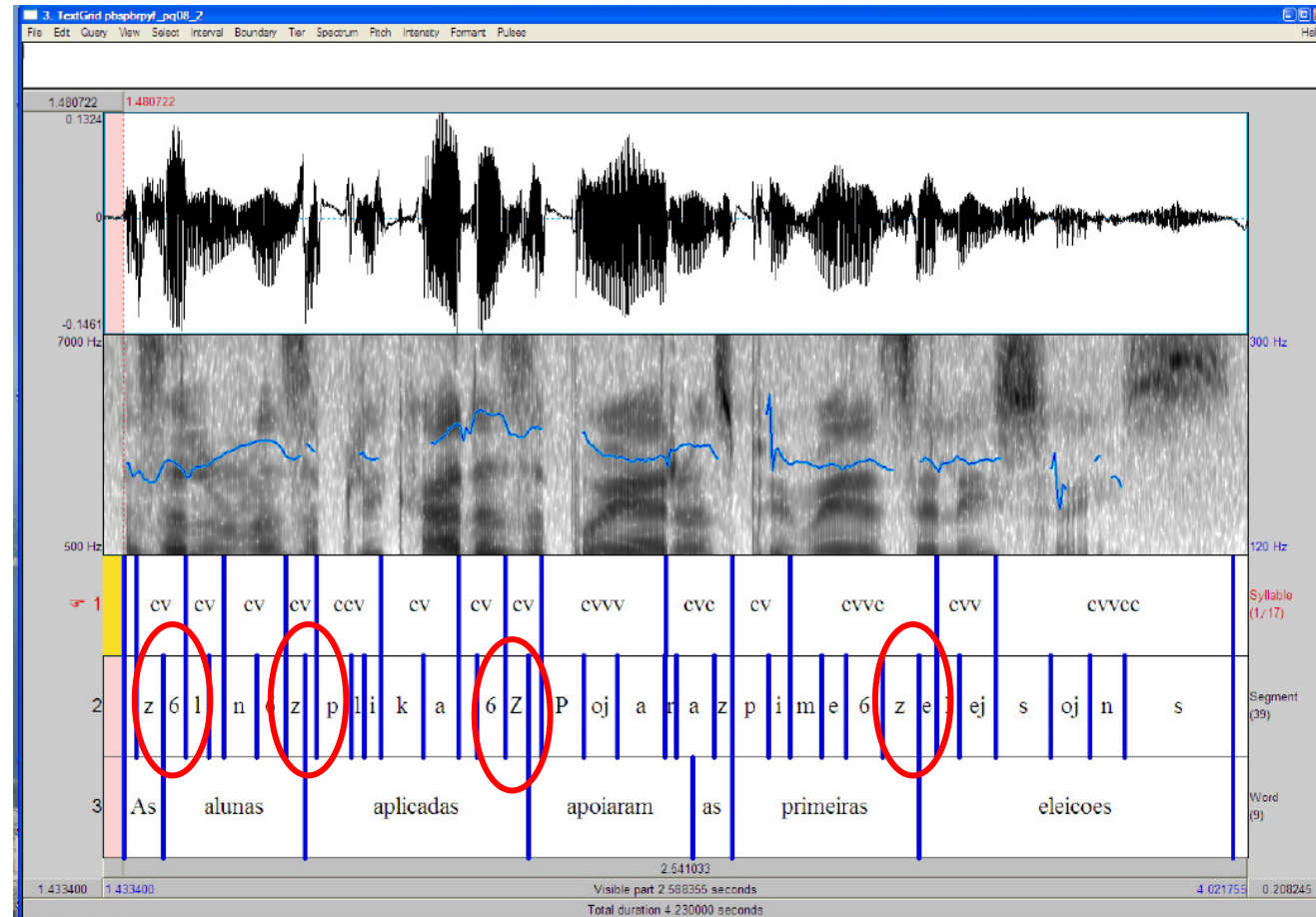
EPI



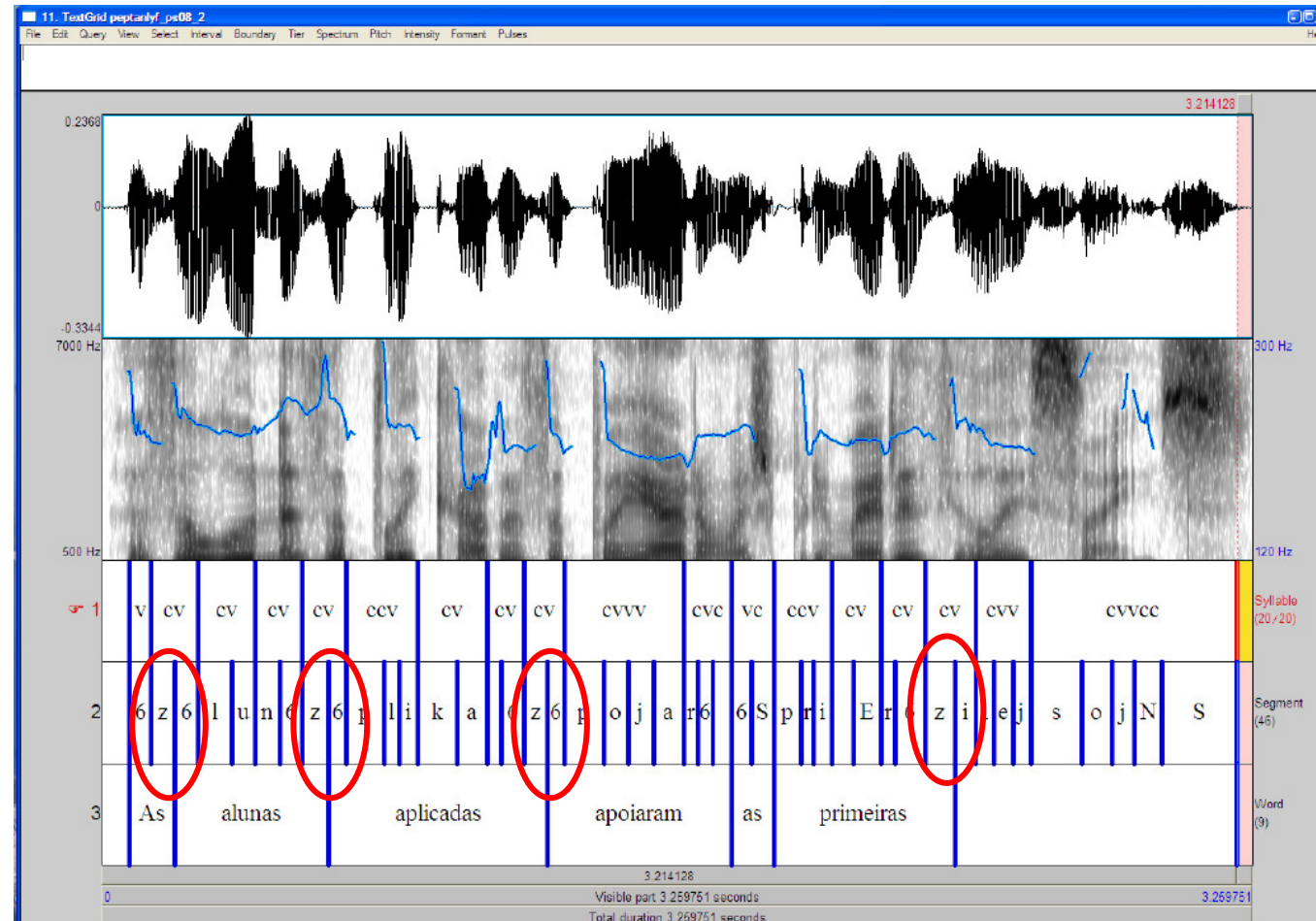
EPa



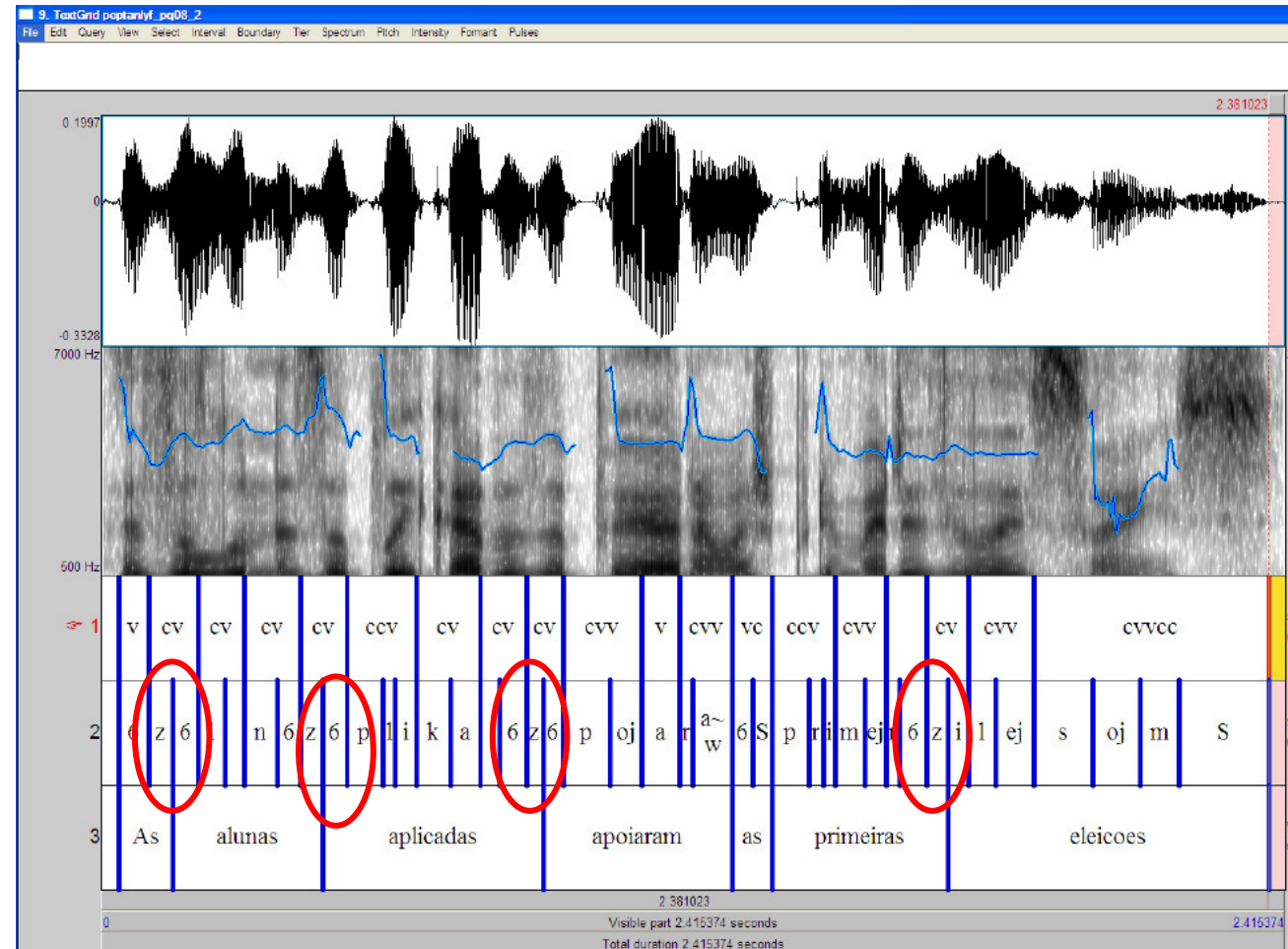
The committed schoolgirls support the first elections“



"The committed schoolgirls support the first elections"



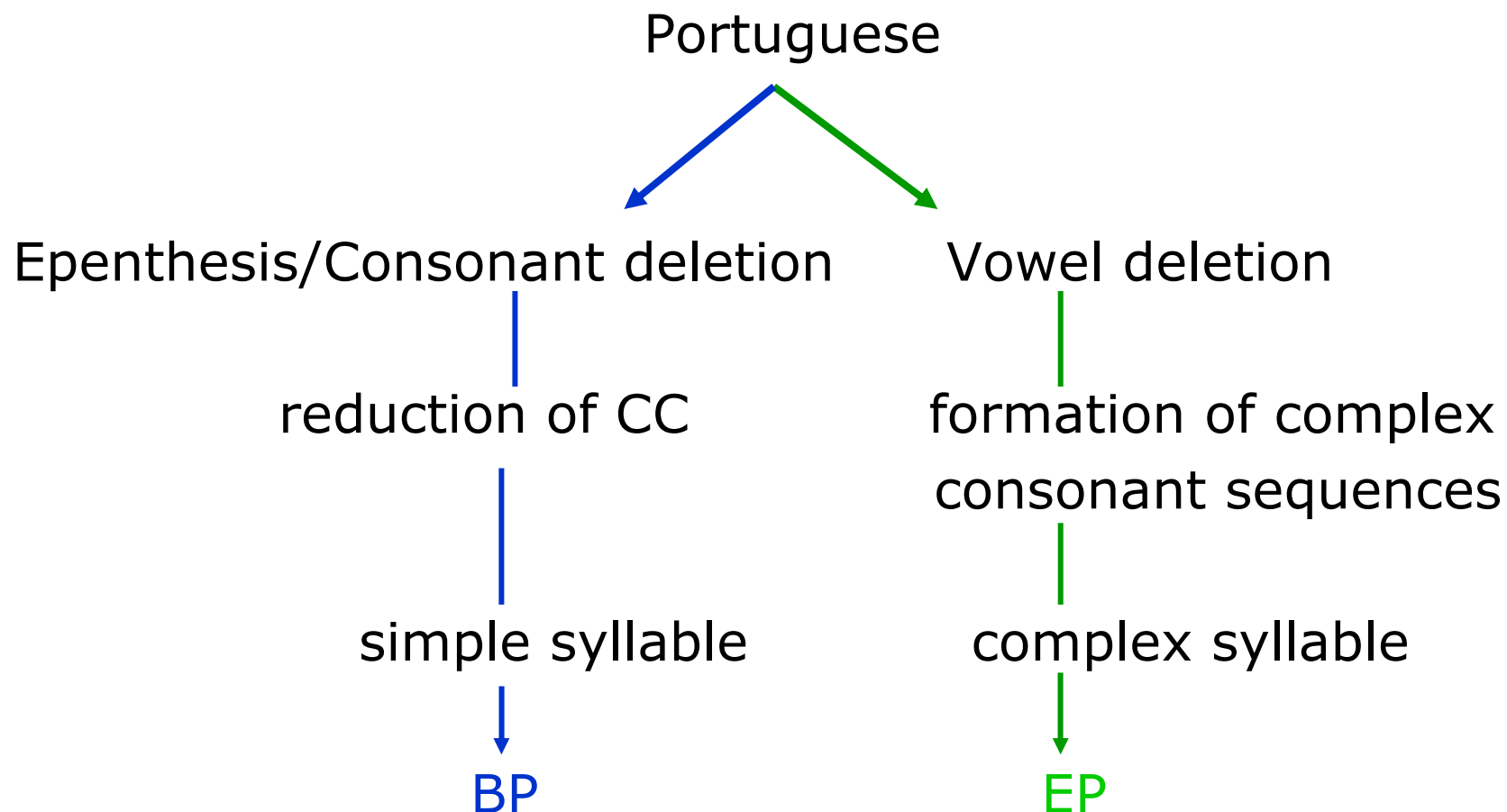
The committed schoolgirls support the first elections“

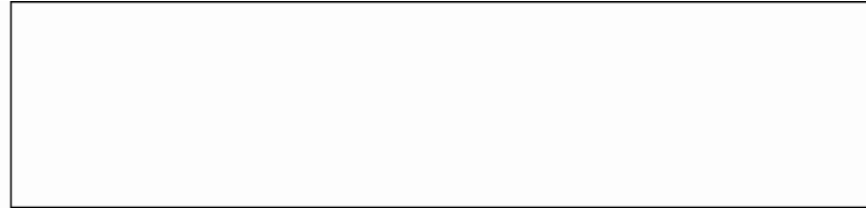


“The committed schoolgirls support the first elections”

Conclusion (1)

- ⇒ There is a lot of variation but the differences between EP and BP seem to be more pregnant than between speech rates in one variant
- ⇒ Vowel system in EP is neutralised in unstressed position
- ⇒ Vowel deletion is more frequent in *allegro* but occurs also in *lento*.





Thank you!