

# Considerations on Brazilian Portuguese stress in derivations

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## Objectives

- (i) Propose a unified analysis to derived words in BP: exceptional cases are accounted for by *moraic extrametricality*
- (ii) *Consider applying (i) to all antepenults in BP*

# BP

σ

- ☞ No long vowels
- ☞ Moraic codas *word-finally* (*pa.pél* - ‘paper’)

## Stress

- ☞ R-L stress assignment
- ☞ σσσσ window (*pla./tó.ni.ko* - ‘platonic’)
- ☞ Cyclicity (*pó.da* → *po.da-dór* - ‘paring/parer’)

# Stress patterns in BP: *n*

Stress \*'σ σσσ]PWd

- ☞ Ults if heavy (*pa.pél, ka.ra.kól*)
- ☞ Else penults (*ka.vá.lo, me.ní.no*)
- ☞ Antepenults: *highly* marked (*fós.fo.ro*)

# Irregular cases

## 1. Antepenults

Often repaired by vowel deletion/reduction\*:

ʃí.ka.ra → ʃí.kra (‘tea-cup’)

## 2. Penults despite heavy ults

ní.vel, már.tir (‘level, martyr’)

## 3. Light ults (*not really irregular*)

za.ka.ré, ma.ré (‘alligator, tide’)

\*Collischonn (2010)

# Two analyses for irregularities

A: Bisol (1992): extrametricality

(á.to)⟨mo⟩	(‘atom’)	⟨σ⟩
(fá.si)⟨l⟩	(‘easy’)	⟨C⟩

☞ **Two** types of extrametricality

☞ Only **final** codas are moraic:

prediction: 'CV.CVC.CV (unattested)

# Two analyses for antepenults

B: Lee (2007): IDSTRESS (OT)  $\rightarrow$  /'σσσσ/

/átomo/

IDSTRESS  $\gg$  ...

☞ Input is stressed  $\rightarrow$  overgeneration:

\*'CV.CV.CV.CV

\*'CV.CV.CVC; \*'CV.CVC.CV

# Suffixes in BP

**A handful of suffixes form a PWd\*:**

$[-\acute{\text{í}}\text{simo}]_{\text{PWd}}$ ,  $[-\acute{\text{z}}\acute{\text{í}}\eta\text{o}]_{\text{PWd}}$ ,  $[-\text{mente}]_{\text{PWd}}$

${}^{\text{'}}\text{tek.ni.ko} \rightarrow [{}^{\text{'}}\text{tek.ni.ka}]_{\text{PWd}} [{}^{\text{'}}\text{men.te}]_{\text{PWd}}$   
(*‘technical, technically’*)

Stress-bearing behavior ( $>90\%$ )

No stress-shifting pattern:

$*\{ / \sigma \sigma' \sigma /_{\text{base}} \rightarrow [ \sigma' \sigma \sigma - \sigma ] \}$

\*Wetzels (2006) among others.



# Data (1)

violíno (*violin*) → violin-**ísta** (*violinist*)

pédra (*stone*) → pedr-**éiro** (*mason*)

sensáto (*wise*) → sensat-**éz** (*wisdom*)

lúta (*fight* n) → luta-**dór** (*fighter*)

ríco (*rich*) → ric-**áço** (*[very] rich*)

# Stress & suffixes

Our claim: Suffixes play no role in stress assignment.

They *look* stress-bearing, but are neutral (contra Schwindt, 2012:124).

Regular stress assignment applies (cyclicly):

$/\sigma\sigma\sigma/ \rightarrow \text{stress} \rightarrow [\sigma'\sigma\sigma]_{\text{PWd}} \rightarrow [\sigma'\sigma\sigma-\sigma]_{\text{PWd}} \rightarrow \text{stress} \rightarrow [\sigma\sigma'\sigma\sigma]_{\text{PWd}}$

↑  
affixation

# But

/-ico/, /-vel/, /-gem/, /-issimo/, /metro/ (...)

económ-ico (cf. \*econom-íco) (*economical*)

metál-ico (cf. \*metal-íco) (*metallic*)

adorá-vel (cf. \*adora-vél) (*adorable*)

destrutí-vel (cf. \*destruti-vél) (*destructible*)

These suffixes yield a marked stress pattern.

# Data (2): irregular outcome

econom- → económ-**ico** (*economic(al)*)

comprar (*buy*) → comprá-**vel** (*buyable*)

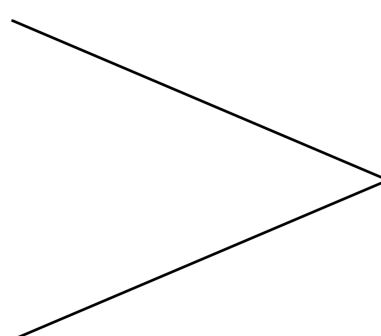
bélo (*beautiful*) → bel-**íssimo** (*gorgeous*)

bandído (*robber*) → bandidá-**gem** (*banditry*)

# Our proposal for derived words

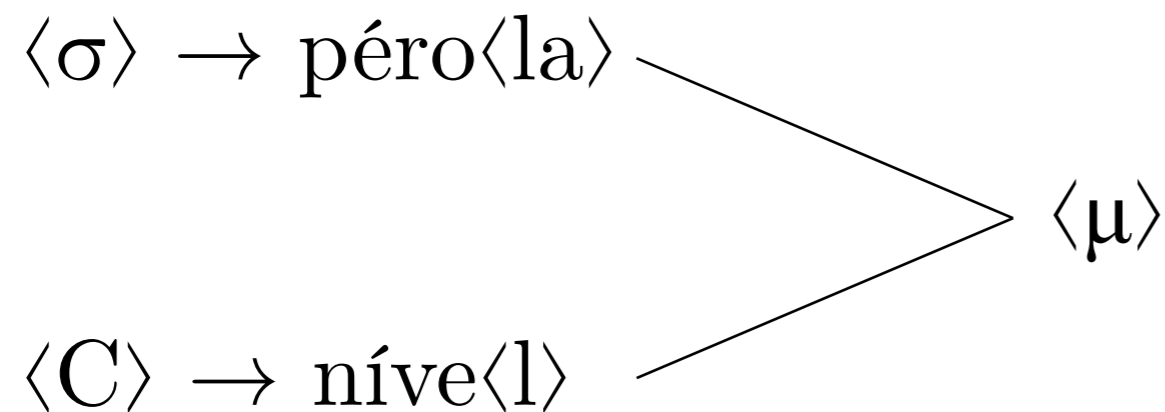
(Bisol's extrametricality)

$\langle \sigma \rangle \rightarrow \text{péro} \langle \text{la} \rangle$   
 $\langle \text{C} \rangle \rightarrow \text{níve} \langle \text{l} \rangle$



# Our proposal for derived words

(Bisol's extrametricality)



# Our proposal for derived words

The few suffixes that yield an irregular stress pattern in the derived form are in fact lexically marked:

they contain an extrametrical *mora* in the input.

# Our proposal for derived words

## **MAXEXTRAMETRICALITY (MAX-⟨⟩)**



*Extrametricality in the input is present in the output.*

MAX-⟨⟩ is undominated and crucially ranked above constraints such as FT-R and FOOTFORM(Trochee).



# Our proposal for exceptional suffixes

μ   μ   μ   μ   ⟨μ⟩  
|   |   |   |   |  
e.ko.no.m-i.ko

$\begin{array}{cccc} \mu & \mu & \mu & \mu & \langle \mu \rangle \\   &   &   &   &   \\ /e & k & o & n & o & m - i & k & o / \end{array}$	MAX-⟨⟩	FT-R	FOOTFORM(T)
 (a) [eko(nómi)k⟨o⟩]		*	
(b) [ekono(míko)]	*!		
$\begin{array}{cccc} \mu & \mu & \mu & \langle \mu \rangle \\   &   &   &   \\ /a & t & o & m - i & k & o / \end{array}$			
 (a) [a(tómi)k⟨o⟩]		*	
(b) [ato(míko)]	*!		

# Interim conclusion

- Suffixes are *not* lexically marked as stressed: regular stress patterns apply to the vast majority of derived words;
- Stress is therefore *blind* to morphological complexity in derivations;
- The few exceptional cases have an extrametrical mora in the input.

# Advantages

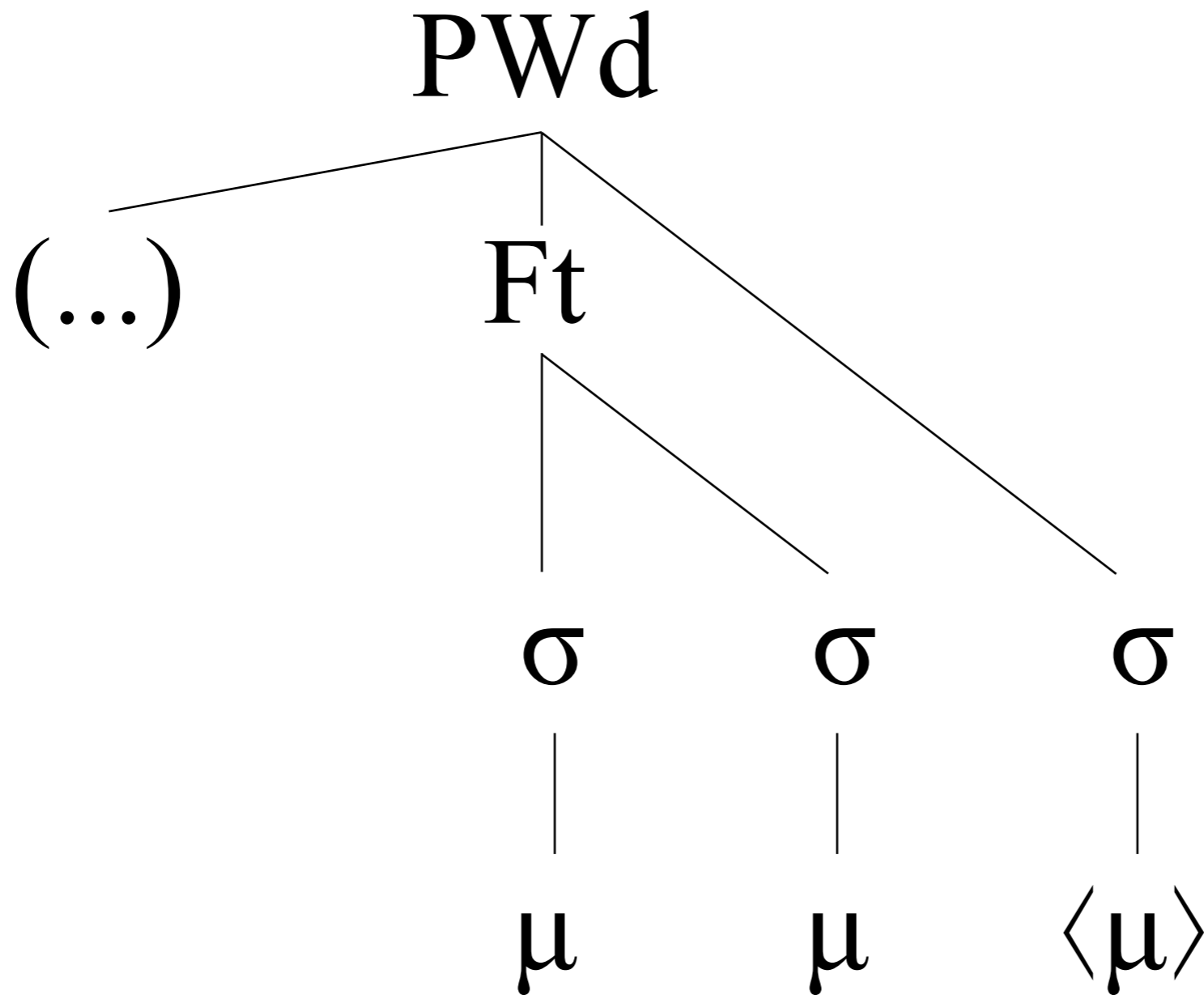
1. Instead of segmental *and* syllabic extrametricality, we only posit moraic extrametricality (cf. Bisol).
2. Stress is always a result of constraint interaction, i.e., it is *never* in the input *per se* (cf. Lee). No overgeneration.
3. Input *still* lexically marked ( $\langle \rangle$ ), but with prosodic structure\*, not stress *per se*;

\*Hale & White Eagle (1980), Halle & Vergnaud (1987) and McCarthy (1997) in OT

# Consequences

1. If exceptionality with derived words is analyzed through the presence of an extrametrical mora in the input, we should find non-derived words that have the same pattern.
2. MAX-⟨⟩ » FT-R would then account for the stress pattern found in non-derived words: (á.to)mo
3. Antepenult stress is marked by an extrametrical mora; we *might* then expect that these forms get regularized overtime.

# Antepenult stress in BP



# Correct predictions

'CV.CV.CV

*but*

\*'CV.CV.CVC (*Lee*)

\*'CV.CVC.CV (*Lee*)(*Bisol*)

\*'CV.CV.CV.CV (*Lee*)

# Future work

Lee's proposal: *all* antepenults are lexically stressed.

(Overgeneration of unattested patterns)

One more problem:

*lexically marked* configuration in need of *repair*



# Repairing antepenult stress

	<b>i</b>	<b>ii</b>	<b>iii</b>
<b>(a)</b>	'ʃi.ka.ra	'ʃi.kǎ.ra	'ʃi.kra
	'fɔs.fo.ro	'fɔs.fǒ.ro	'fɔs.fro


# Repairing antepenult stress

	<b>i</b>	<b>ii</b>	<b>iii</b>
<b>(a)</b>	'ʃi.ka.ra	'ʃi.kǎ.ra	'ʃi.kra
	'fɔs.fo.ro	'fɔs.fǔ.ro	'fɔs.fro
<b>(b)</b>	'pa.sa.ro	'pa.sǎ.ro	'pa.sǎ.ro
	'a.to.mo	'a.tǔ.mo	'a.tǔ.mo

# Repairing antepenult stress

	<b>i</b>	<b>ii</b>	<b>iii</b>
<b>(a)</b>	'ʃi.ka.ra	'ʃi.kǎ.ra	'ʃi.kra
	'fɔs.fo.ro	'fɔs.fǔ.ro	'fɔs.fro
<b>(b)</b>	'pa.sa.ro	'pa.sǎ.ro	'pa.sǎ.ro
	'a.to.mo	'a.tǔ.mo	'a.tǔ.mo

Repair as much as possible  
*but respect the phonotactic patterns in BP*

# Final remarks

## Moraic extrametricality...

- is better motivated than Lee's stressed inputs:
  - (i) antepenults tend to be repaired ( $\langle \rangle$ )
  - (ii) unattested stress patterns are predicted
- unifies *what* is extrametrical (C vs.  $\sigma$  — Bisol (1992))
  - link between moraic moras and extrametricality
  - codas are not moraic only word-finally

# What's next

- A complete analysis of antepenult stress in BP, which would be the key to proposing a unified account for BP stress.
- Repair and extra-linguistic factors: input and language change
- OT analysis that includes the repair mechanism;

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*Thank you.*