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# Three problems with Portuguese palatal sonorants

JOAQUIM BRANDÃO DE CARVALHO\*

**Abstract** Like many of its sister languages (e.g., Italian, Catalan, Northern Castilian, Early Modern French), Portuguese is said to have the two palatal phonemes /ɲ/ and /ʎ/ in its consonantal system. Unlike its Spanish and French counterparts, the palatal lateral is remarkably stable, and did not undergo vocalization both in European Portuguese and in standard Brazilian varieties. However, the phonemic status of these sonorants is questionable, as it raises five issues regarding their distribution. Two alternative claims have been made, one of which provides a satisfactory account of these issues by assuming that both palatal sonorants involve a “covert” diphthong whose off-glide shares its position with the following onset.

I will argue for this proposal, while pointing out that two other problems remain: the first concerns an apparent paradox between the weight of the covert diphthong and its behaviour vis-à-vis European Portuguese vowel reduction; the second is about why the nasal and the lateral consonants, and only those, behave alike with respect to palatality. It will be shown that both problems can be given simple and straightforward solutions where the structure of phonological representations obviates the need for serial rules, in the first case, and explains the parallel between [ɲ] and [ʎ], in the second case.

There are three problems with Portuguese palatal sonorants:

**I Distribution**

**II Weight**

**III Why do (only) N and L behave in the same way?**

**... and related theoretical issues**

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## I Distribution 1

Unlike /m, n, l/, the palatals [ɲ, ʎ]:

- are disallowed word-initially,
- do not admit complex rhymes at their left ( $\neq$  *arma, perna, Carlos; teima, bóina, baila*),
- nor can they occur in the last syllable of proparoxytones (\*'CVCVɲV]<sub>ω</sub>, \*'CVCVʎV]<sub>ω</sub>).

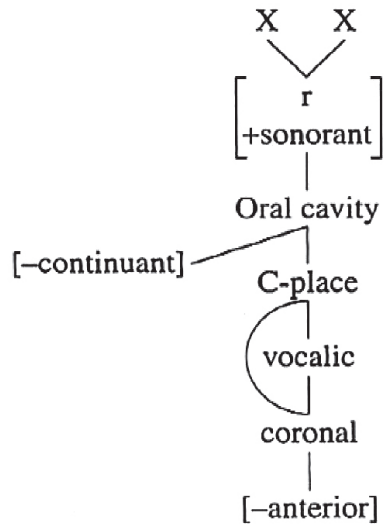
Unlike /m, n/, [ɲ] nasalizes the preceding vowel (even) in pretonic syllables in BP (*s[õ]nhar*  $\neq$  *t[o]mar*).

Unlike /m, n/, the rare word-initial [ɲ] (in loanwords like *gnocchi*) may trigger prothesis in BP ([i'ɲoki]).

Why?

## I Distribution 2

According to Wetzels (1997: 220; see also Giangola 1995), this is because [ɲ, ʎ] are underlyingly geminates:



BUT why should [ɲ, ʎ] (and [r]) be the only geminates in Portuguese?  
Portuguese is not Italian, where all consonants can be geminates.

### I Distribution 3

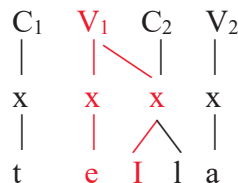
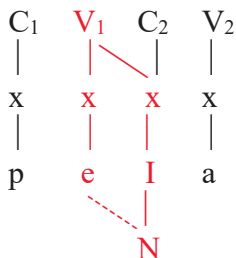
I will follow Pimenta’s (2019: 220-2) account of [ɲ]:

[ɲ] results from a preceding “covert” diphthong, whose I off-glide shares its slot with a C-position, as in (1).

Generalizing this to [ʎ] gives (2).

(1) [ˈpeɲɐ ~ ˈpẽɲɐ]      *penha* ‘rock’

(2) [ˈteʎɐ] *telha* ‘tile’

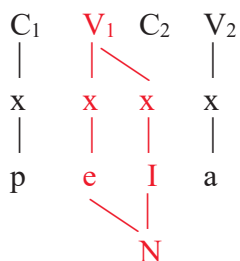


I leave aside EP ei-dissimilation (cf. [sɐj] *sei*), which provides additional evidence for a diphthong /eɪ/ in [ˈpeɲɐ] and [ˈteʎɐ].

## I Distribution 4

In BP, where [ɲ] is often vocalized (> [j̃]), C<sub>2</sub> is not anchored to the skeleton, as in (1').

(1') [ˈpẽj̃ɐ] *penha* 'rock'



In EP the same generally holds in sandhi contexts, hence [ˈtẽj̃ɐ] *tem a...* ≠ *tenha* [ˈtẽɲɐ] ~ [ˈtɛɲɐ].



## II Weight 1

Solving a paradox:

- [ɲ, ʎ] are unattested in the last syllable of proparoxytones: the preceding V is thus heavy (Velooso 2019).
- V undergoes reduction (*emp[ə]nhar*, *t[ə]lhado*): the preceding V is thus light (Carvalho 1989, 2011).



## II Weight 2

Solving a paradox:

- [ɲ, ʌ] are unattested in the last syllable of proparoxytones: the preceding V is thus heavy (Velooso 2019).
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According to Pimenta (2019: 222), resyllabification involves V-delinking from its second slot, the syllable becoming thus light and likely to undergo vowel reduction.

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According to Pimenta (2019: 222), resyllabification involves V-delinking from its second slot, the syllable becoming thus light and likely to undergo vowel reduction.

However, this implies serial (feeding) derivation:

(5) Stress assignment >> resyllabification >> vowel reduction.

*Is (morpheme-internal) phonology serial?*

I propose a purely representational alternative solution to the paradox; there is no derivation whatsoever.

## II Weight 4

Portuguese A-containing diphthongs (the arrow stands for intranucleic government):

(6) a. /ei/



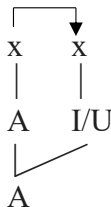
b. /ou/



(7) a. /eu/



b. /ai, au/



c. /oi/



The idea of ambiassociation is drawn from Caratini's (2009: 478 ff.) theory of diphthongs within Strict CV.

The same holds for /VI/ and /VN/ rhymes, where /l/ and /N/ (unlike /r/) are associated with both slots of a heavy nucleus.

## II Weight 5

(6) a. /ei/



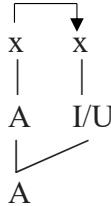
b. /ou/



(7) a. /eu/



b. /ai, au/



c. /oi/



The representations in (6, 7) follow from:

(8) a. OCP: \*XX in the same tier.

b. A constraint banning IU-vowels (/y, ø.../) in Portuguese. (Hence, a slot cannot be associated to both I and U in Portuguese.)

I am leaving aside:

- (i) /ɔi/ for lack of evidence regarding vowel reduction or its absence,
- (ii) /ɛi, ɛu/ which (along with /iu/) can be argued to be underlying hiatuses,
- (iii) the monophthongized versions of /ei, ou/ which satisfy differently the constraint under (8a).

## II Weight 6

(6) a. /ei/



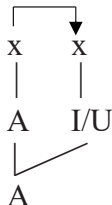
b. /ou/



(7) a. /eu/



b. /ai, au/



c. /oi/

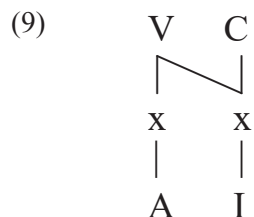


The homorganic diphthongs in (6) result from A-bipositionality on  $T_1$ ; the non-homorganic ones in (7) from A-bipositionality on  $T_2$ .

I follow here a revised version of Honeybone's (2005) "Sharing makes us stronger" hypothesis: A-bipositionality favours lexical anchoring, which disallows vowel reduction.

## II Weight 7

That being said, the reason for the paradox above is simply that, given a structure like (9):



... stress scans *structure* (V being bipositional, the nucleus is heavy), while reduction targets *melodies* (A).

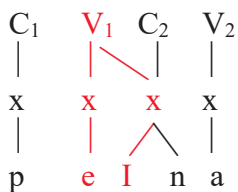
The covert diphthongs preceding [ɲ, ʎ] in (1, 2) have a unipositional A-element, because *the A-element cannot be linked to a C-associated slot*. They therefore undergo vowel reduction.

No resyllabification process and thus no serial derivation are needed.

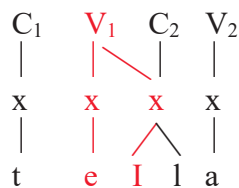
### III Why /l/? 1

It could be argued that [ɲ] can be accounted for by replacing /N/ with /n/ in (1), following the representation of [ʎ] in (2):

(1) ['peɲə ~ 'pẽɲə] *penha* 'rock'



(2) ['teʎə] *telha* 'tile'



However, the fact that [ɲ] > [j] occurs in most BP, while [ʎ] > [j] is restricted to the lowest varieties (which also vocalize [ɲ]), suggests that the first process simply requires C<sub>2</sub>-delinking without any melodic material other than nasality, only the second one involving the additional loss of a segmental component (/l/).

But *why is /l/ in (2) so I-friendly as opposed to all other consonants?*

### III Why /l/? 2

Carvalho's (2017) sonority theory provides an answer to this question by assuming that:

- (10) a. Liquids are associated to both C- and V-positions,
- b. and may not have a slot of their own (unless this is required by weight, i.e. structure, as in /vl/ rhymes).



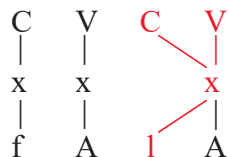
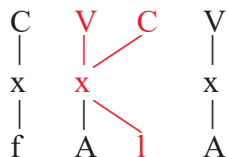
### III Why /l/? 3

- (10) a. Liquids are associated to both C- and V-positions,  
 b. and may not have a slot of their own (unless this is required by weight, i.e. structure, as in /Vl/ rhymes).

In Portuguese /l/ (not /r/) meets the condition in (10b). Translated into standard autosegmental formalism, (10a,b) allow:

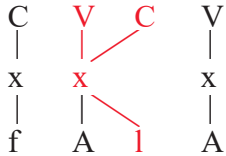
- (i) stress-driven left or rightward association of intervocalic /l/ (cf. Viana 1883: 49; Sá Nogueira 1934-35: 81-82):

- (11) a. ['faɫ.ɐ] *fala* 's/he speaks'                      b. [fɐ.'la(r)] *falar* 'to speak'

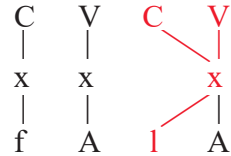


### III Why /l/? 4

(11) a. [ˈfaʎ.v] *fala* ‘s/he speaks’



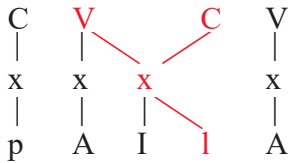
b. [fɛ.ˈla(r)] *falar* ‘to speak’



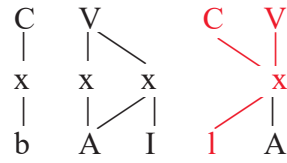
... as well as:

(ii) both covert and overt diphthongs before /l/, as shown in (12a,b).

(12) a. [ˈpaʎv] *palha* ‘straw’



b. [ˈbaɪ̯.lɐ] *baila* ‘s/he dances’



Again, A cannot be linked to a C-associated slot in (12a). Hence, as the vowel is not bipositional like the one in (12b), it undergoes VR.

Again, no resyllabification process and thus no serial derivation are needed to explain VR in, say, *emp[v]lhar*.

## Conclusion

[ɲ, ʎ] are not phonemes in Portuguese, as they need a diphthong at their left.

Interestingly, reaching this conclusion brings into play at least four different aspects of phonology:

- Systemic typology, which rules out palatal geminates in Portuguese (§1).
- The issue of whether the workings of the phonological module are serial or parallel (§2).
- The representation of diphthongs (§2).
- The role of positions and melodies in phonological representations (§2).
- The representation of liquids (§3).

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