

REANALYZING THE THEME VOWEL IN PORTUGUESE

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1. Introduction¹

The aim of this article is to point out the differences in the functions of segments traditionally referred to as the ‘theme vowel’ in many morphological studies on Romance Languages (Rio Torto 1998, Villalva 2000, Mateus et al. 2003, Azevedo 2005). It is a general misconception to treat the segments, appearing between the root and the suffixes of nouns, adjectives and verbs, as having identical status in the morphological segmentation or as having the same functions. The traditional term ‘theme vowel’, used to designate them, already suggests that the three segments have parallel segmentational or functional status. For this reason, I am going to abandon this term, and will adopt a new term ‘intermediate vowel’ (IV), which purely refers to the position these vowels occupy.

(1) Theme Vowel: the ‘Intermediate Vowel’

Root	IV	Suffix	
[sec] _A	[o]	[s]	‘dry’
[sec] _N	[a]	[s]	‘drought’
[sec] _V	[a]	[r]	‘to dry’

This study is only interested in the difference between the intermediate vowels of nouns and adjectives, leaving the matter of verbal intermediate vowels aside for the moment, as possible subject of future research. In the following section, I am going to examine the view according to which the intermediate vowel functions as gender inflection in nouns and adjectives. In the third section, a different approach is going to be evaluated which considers the intermediate vowel of nouns as a marker of their grammatical subcategory i.e. declension. In the fourth section, I will examine whether we have any reason to believe that the intermediate vowel is a derivational suffix, and will present evidence to claim that the intermediate vowel of nouns and the intermediate vowel of adjectives are two different morphological entities.

¹ In preparing the present paper, I have benefited greatly from the comments of two anonymous BIDE’06 reviewers. Thanks also to the organizers and participants of BIDE’06 conference for listening to and commenting on the talk. I am grateful to Géza Balogh for his willingness to exchange ideas, for his valuable comments and for proofreading.

adjectives is also well defined. Masculine adjectives ending in the intermediate vowel *-o* assume the termination *-a*, and vice versa, when a change of gender is required.² On the other hand, the second category, athematic adjectives ending in a vowel different from *-o/ -a* or in a consonant are uniform.

- (5) System of adjectives
- | | | | |
|------------------|------------------|------------|----------|
| a. Variable | | b. Uniform | (ending) |
| novo/a | 'new' | leve | [@/ĩ] |
| característico/a | 'characteristic' | simples | [S] |
| | | ruim | [ĩ] |

There are a few exceptions, though. Some adjectives, referring to nationalities and adjectives with a pejorative sense behave in an identically irregular fashion in Portuguese. The masculine forms are consonant-final while their feminine counterparts are formed with the addition of an *-a* (*português-portuguesa* 'Portuguese', *inglês-inglesa* 'English', *falador-faladora* 'who speaks much/chatterbox'). The reason for this irregularity is to be found in the nominal origin of these adjectives. The pairs of adjectives are taken from the nominal system without any formal change, which is the clear case of conversion (6). There is another very limited set of irregular adjectives in Portuguese such as *bom-boa* 'good', *são-sã* 'healthy'. All these exceptional cases are lexicalized and thus, are beyond the domain of Morphology.

- (6) Conversion
- | | |
|--|-------------------|
| comida portuguesa | 'Portuguese food' |
| [[portugues _{Masc}] _N [a _{Fem} Suf] _{N, Fem} → [portuguesa] _{Adj, Fem} | |

So far, we have seen that it is a false generalization to claim that nouns and adjectives behave in the same way in Portuguese with respect to gender alternation. It has been shown that while gender alternation of nouns is not systematic, adjectives have a regulated system of gender change. Now, let me return to Villalva's first argument against the inflectional status of the intermediate vowel, which claims that gender alternation is not obligatory. Here, we will also have to make a distinction between nouns and adjectives. Note that while in sentences like those in (7a) below the different nouns: *menina* and *menino* are chosen on a lexical basis, the choice of the adjectives in (7b) is driven by a syntactic rule. A choice like **menino nova*, where the adjective does not agree in gender with the noun it modifies, is marked as ungrammatical.

- (7) a. Vejo uma menina. 'I see a girl.'
 Vejo um menino. 'I see a boy.'
- b. *menino_{Masc} nova_{Fem} 'young boy'
 *menina_{Fem} novo_{Masc} 'young girl'
- (8) casa_{Fem} azul_{Fem} 'blue house'
 livro_{Masc} azul_{Masc} 'blue book'

² The only exceptions here are adjectives formed with the *-ista* suffix, such as *comunista* 'communist', *feminista* 'feminist'. The final *-a* cannot be considered an intermediate vowel, since it patterns together with athematic words, assuming *-zinho* diminutive (*comunistazinho* 'little communist' c.f. *cafezinho* 'little coffee', *manhazinho* 'dawn').

Agreement in gender, either expressed by the alternation of the intermediate vowel, or by lexical variation (c.f. *faladora*, *bom*), is obligatory for adjectives. Without exceptions, every adjective with alternating forms, will display gender alternation in the appropriate syntactic context. Gender alternation thus has an inflectional status in adjectives.³ The gender inflection may be realized by the alternation of the intermediate vowel (5a) or by a zero inflection (2b, 8). In exceptional cases, the relevant lexicalized suppletive forms are inserted into the noun phrase (6).

3. Class Marker

In section 2, it has been shown that the intermediate vowel of adjectives has an inflectional status, but the question of what function the intermediate vowel of nouns has remains unanswered. It is easily proven that the nominal intermediate vowel cannot be a gender morpheme because the correlation between endings and genders is far from being perfect. There are a considerable number of masculine nouns ending in the general feminine intermediate vowel *-a*, and there are some feminine nouns ending in *-o*, while there are many nouns of both genders ending in consonants, diphthongs and stressed vowels where the gender is unpredictable from the form (9).

- (9) Termination – gender noncorrespondence in nouns
- | | |
|-----------------------|---------|
| tribo _{Fem} | ‘tribe’ |
| poeta _{Masc} | ‘poet’ |
| mulher _{Fem} | ‘woman’ |
| mar _{Masc} | ‘sea’ |
| mão _{Fem} | ‘hand’ |
| chão _{Masc} | ‘floor’ |

Thus, I agree with Villalva that the intermediate vowel of nouns is neither gender inflection, nor any type of marker of it. Led by the same considerations, many authors of Romance morphology rejecting this view argued that the intermediate vowel of nouns is a class marker, the segment that decides to which inflectional class a noun belongs. Authors like Harris (1991) and Aronoff (1994), discussing Spanish morphology, defined three noun classes (10), purely distinguished by the intermediate vowels, while other authors set systems of 15 or even 23 classes for nouns (Villalva 2000, Mateus et al. 2003). However, I will argue that there is no correlation between intermediate vowels and noun classes; what is more, there is no reason to suppose inflectional classes for nouns (declensions) in Portuguese. Hence, the intermediate vowel cannot be a marker of (non-existent) inflectional subcategories.

- (10) Noun Classes (Harris 1991):
- | | | |
|------|---------------|-------------------|
| 1 -o | menino, tribo | ‘boy’, ‘tribe’ |
| 2 -a | menina, poeta | ‘girl’, ‘poet’ |
| 3 -∅ | café, mulher | ‘coffee’, ‘woman’ |

³ The same conclusion was reached by Matthews for Italian (1974: 48) and Mateus & d’Andrade for Portuguese (2000: 69).

The definition of the inflectional class, according to Aronoff, is found in (11) (Aronoff 1994: 64).

(11) Inflectional Class

An inflectional class is a set of lexemes the members of which select the same set of inflectional realizations.

The above definition is illustrated by systems like the Latin declension system. An α set of lexemes, like *casa*, *terra* select an α set of inflectional realizations in the different morpho-syntactic categories, while a β set of lexemes, like *domus* and *servus* select a different, β set of suffixes to express the same morpho-syntactic categories (12). In Portuguese, the existence of inflectional classes is less obvious. The nominal morphology of Portuguese involves only one morpho-syntactic category expressed by an inflectional process, the plural. Furthermore, Portuguese nouns behave very similarly in the pluralization process: with few exceptions, they all take the plural suffix $-(V)s$ (13).

(12) Latin plural formation

I.		II.		III.	...
<i>cas-ae</i>	‘houses’	<i>dom-i</i>	‘masters’
<i>terr-ae</i>	‘lands’	<i>serv-i</i>	‘servants’		

(13) Portuguese plural formation

‘Class’ ⁴	SING	Gloss	PLURAL-INFL
I	<i>menino</i>	‘boy’	<i>menino-s</i>
	<i>livro</i>	‘book’	<i>livro-s</i>
II	<i>menina</i>	‘girl’	<i>menina-s</i>
	<i>poeta</i>	‘poet’	<i>poeta-s</i>
III	<i>café</i>	‘coffee’	<i>café-s</i>
	<i>manhã</i>	‘morning’	<i>manhã-s</i>
III	<i>mar</i>	‘sea’	<i>mar-es</i>
	<i>monte</i>	‘mountain’	<i>mont(e)⁵-es</i>
III	<i>caracol</i>	‘snail’	<i>caraco-is</i>
	<i>cão</i>	‘dog’	<i>cã-es</i>
	<i>lápiz</i>	‘pencil’	<i>lápiz_{pl}</i>

Looking at the table in (13), we can see that there is no difference between the behaviour of nouns ending in different intermediate vowels, namely in *-o*

⁴ As defined by Harris (1991).

⁵ The final vowel is parenthesized because in present day European Portuguese unstressed [ə] is unpronounced. For this reason, *e*-final nouns can be considered consonant-final (Villalva 2000), although in other studies *-e* is considered an intermediate vowel just as *-a* and *-o* (Mateus et al. 2003, Azevedo 2005). But in either case rule (18) (see later) holds.

like *livro* ('Class' I) and *-a* like *casa* ('Class' II) with respect to inflectional suffixation. Nor do nouns with no intermediate vowel (ending in a nasal or a stressed vowel) like *café* or *manhã* (Class III) differ. Recall that these sets of nouns are categorized into three different classes by Harris (10) and by several other authors. The only variation this table shows is within the group of nouns ending in a consonant or a nasal diphthong where the plural suffix is realized with an epenthetic vowel. [S]-final nouns stressed on the penult (*lápís*) do not change their form in the plural.

Now, one may wonder if it is the same *-(V)s* plural suffix which sometimes has different phonetic realizations or there are more than one plural morpheme in Portuguese. Let us return to Aronoff's definition of the inflectional class, stated in (11). There are two ways to interpret this definition. The 'strong' interpretation of the definition requires that a certain set of lexemes select the same set of inflectional realizations, where 'the same' is true for the underlying and the surface levels as well. In this case, illustrated in (14), only those nouns belong to the same class, the inflection of which is phonetically realized identically. This way, Portuguese will have numerous declensions for nouns; words like *meninos*, *mares*, *caracois*, *cães*, *lápís* will be included in distinct inflectional classes. Note however, that there is no way to differentiate *meninos*, *meninas*, *manhãs*, *cafés*, etc. They will all belong to the same class of nouns, which contradicts all noun categorizations ever made in Portuguese morphology (Villalva 2000, Mateus et al. 2003).

(14) Strong interpretation of (11) – same in the UR, same in the SR

$$\begin{array}{l} /menin_{\text{Root}} + O_{\text{Intermediate Vowel}} + S_{\text{Plural Morpheme}} / \\ /menin_{\text{Root}} + A_{\text{Intermediate Vowel}} + S_{\text{Plural Morpheme}} / \end{array}$$

(15) Weak interpretation of (11) – same in the UR, different in the SR

$$\begin{array}{l} /livr_{\text{Root}} + O_{\text{Intermediate Vowel}} + S_{\text{Plural Morpheme}} / \\ /caoN_{\text{Inflectional Root}} + E_{\text{Intermediate Vowel}} + S_{\text{Plural Morpheme}} / \end{array}$$

The 'weak' interpretation will say that a set of lexemes belonging to the same inflectional class assume the same set of inflectional realizations in the underlying level, which may differ on the surface level if the phonology thus requires (15). In this case, we will find that all Portuguese nouns belong to the same inflectional class. Surprisingly enough, we find that most Portuguese phoneticians analyze nouns according to the weak interpretation, but they support the strong interpretation with respect to morphological categorization (Câmara 1970: 90, Mateus e d'Andrade 2000: 72-73, Mateus et al. 2003: 1019-1020, Veloso 2005: 330-336). This article is intended to resolve such confusions.

The aim of this section was to show that the intermediate vowel of Portuguese nouns does not function as a class marker. This was proven by data from Portuguese pluralization, whereby it was made clear that the difference in the intermediate vowel of nouns does not necessarily mean that they are inflected differently in the plural, nor is the reverse true, i.e., nouns with different inflectional realizations in the plural contain different intermediate vowels. Moreover, based on the weak interpretation of Aronoff's definition of the inflectional class (Aronoff 1994), it has been suggested that there are absolutely no inflectional classes for nouns in Portuguese.

4. Derivational suffix

Derivational patterns of Portuguese words suggest a different analysis of the facts. As it is apparent from (16) below, the intermediate vowel seems to share its position with the derivational suffix. In other words, there seems to exist a position where either an intermediate vowel or a derivational suffix appears. This apparent complementary distribution may at first sight suggest that the intermediate vowel is itself a derivational suffix, one which derives nouns and adjectives from roots unspecified for grammatical category (17).

(16) a. N → N Derivation

livr#o	‘book’	cas#a	‘house’
livr#aria	‘book shop’	cas#eiro	‘domestic’
livr#inho	‘small book’		
mont(e)	‘mountain’	mar	‘sea’
mont#eiro	‘hunter’	mar#ino	‘related to sea’

b. Adj – N Derivation

nov#o	‘new’	bel#o	‘beautiful’
nov#idade	‘news’	bel#eza	‘beauty’
verd(e)	‘green’		
verd#ura	‘vegetables’		

(17) Derivation from roots underspecified for grammatical category

$$\begin{matrix} [[\text{livr}_{\text{Root}}]_{\text{Not Specified}} [\text{aria}_{\text{Derivational Suffix}}]_{\text{N}}]_{\text{N}} \\ [[\text{livr}_{\text{Root}}]_{\text{Not Specified}} [\text{o}_{\text{Derivational Suffix}}]_{\text{N}}]_{\text{N}} \end{matrix}$$

There are serious problems with this analysis, though. Based on Aronoff’s analysis of Latin theme vowels (1994: 45), I am going to list counter arguments against the analysis presented in (17). First, this analysis presumes that there are very few underived words (i.e. without an intermediate vowel or a derivational suffix, e.g. *café*, *mar*) in Portuguese. Second, derivational suffixes, different from *-o/-a*, have to be analyzed as consisting of two suffixes: *livr#ari#a*, *cas#eir#o*. According to Aronoff, this is very improbable, since this analysis would mean that the majority of nouns would be derived from non-occurring nouns as **livrari-*, **caseir-*.

Alternatively, it is possible to view the complementary distribution of the intermediate vowel and the derivational suffix, illustrated in (16), as a consequence of a phonological constraint in Portuguese. In Portuguese, most derivational suffixes attaching to nouns and adjectives are vowel-initial. There is reason to believe that a final unstressed vowel (i.e. intermediate vowel) is deleted before vowel-initial suffixes to avoid cross-boundary hiatus. This constraint is stated in (18).

(18) Cross-boundary anti-hiatus constraint for nouns and adjectives⁶

$$V [-\text{stress}] \rightarrow \text{ɨ} / _ \# V$$

⁶ An identical rule, called Vowel Deletion rule is assumed by Scalise (1983: 287 ff.) to operate in Italian suffixation.

Three pieces of evidence in favour of the cross-boundary anti-hiatus constraint are provided in (19). First, there are no nominal or adjectival forms attested in Portuguese where a final unstressed vowel is followed by a vowel-initial suffix (19a). Second, consonant-initial derivational suffixes do not provoke intermediate vowel deletion (19b), since consonant-initial suffixes do not constitute the hiatus context stated in (18). Third, nouns ending in a stressed vowel, thus not possibly affected by (18), never take vowel-initial derivational affixes. There are diverse strategies, which guarantee that the final vowel does not meet a vowel across the word-boundary (19c). The form *cafeteria*, for instance, contains an epenthetic [t], and in *cafezinho*, the marked consonant-initial allomorph of the diminutive suffix *-zinho* is chosen instead of the vowel-initial one.

(19) Hiatus avoiding

- | | | | |
|----|-------------|-------------|-----------------|
| a. | *livro#ria | | 'library' |
| | *casa#eiro | | 'domestic' |
| | *novo#idade | | 'news' |
| b. | livro#zinho | | 'booklet' |
| | nova#mente | | 'newly' |
| c. | *caf#aria | cafe#taria | 'café' |
| | *caf#inho | cafe#zinho | 'little coffee' |
| | *manh#inha | manha#zinha | 'dawn' |

The cross-boundary anti-hiatus constraint gives a straightforward explanation of the facts in (16). Hence, there is no reason to believe that the intermediate vowel is a derivational suffix, sharing a position with other derivational suffixes. The anti-hiatus constraint, being a phonological constraint, is blind to morphology. It deletes all unstressed final vowels in adjectives and nouns, independently of the morphological status of that vowel. Thus, the gender inflection of adjectives, and the still undefined intermediate vowel of nouns equally provide context to (18).

5. Conclusions

In the previous sections, we have found that the intermediate vowel of adjectives has inflectional status. However, the status of the intermediate vowel of nouns has remained unclear. We have seen that there is evidence that the intermediate vowel of nouns is neither gender inflection, nor class marker nor derivational suffix. After so many negative answers, the question is in order as to whether the intermediate vowel of nouns has morphemic status at all. I assume that the usual but not exclusive pattern of nouns, ending in *-o / -a* is independent of the morphology of the language.

The presence of the intermediate vowel in Portuguese and in other Romance languages is due to diachronic facts, *-o / -a* are the developments of the (Vulgar) Latin *-um / -am* endings respectively. The *-um / -am* desinences are the inflectional realizations of the accusative in Classical Latin, but already in Vulgar Latin they were used to substitute all non-nominative cases (Teyssier 1982). The arguments presented in this article have tried to show that this tendency was continued further, thus by the present state of Portuguese, the intermediate vowel of nouns has completely lost its morphological function. Furthermore, from (20) below, it becomes clear that today the *-o / -a* intermediate vowel is not a compulsory part of nouns, since there

are many nouns lacking these final vowels. In fact, most recent Portuguese nouns, mostly borrowings from English, contain no intermediate vowel. The fact that there is no tendency to adapt words to the *-o* / *-a* pattern shows that the intermediate vowel has no synchronic function.

(20) Recent borrowings into Portuguese

computador	‘computer’
Internet	‘internet’
faxe	‘fax’
monitor	‘monitor’
blogue	‘blog’
plotagem	‘plotting’
celular	‘cell phone’

However, assuming that the intermediate vowel of nouns has no function is not sufficient to claim that it does not have a morphemic status. A stronger piece of evidence comes from the cross-boundary anti-hiatus rule introduced in section 4. It was claimed that unstressed vowels at a morpheme boundary followed by a vowel are deleted. The existence of such words as *névoa* ‘mist’, *póvoa* ‘habitation’, *tábua* ‘tableau’ proves that there is no morpheme boundary before the intermediate vowel, otherwise the preceding unstressed vowel would have to be deleted (**névo#a*). As no morpheme boundary is detected in nouns containing an intermediate vowel, we can now claim that the intermediate vowel of nouns does not have morphemic status. It is thus derived that there is no such independent morpheme as the intermediate vowel of nouns. Consequently, the segmentation of nouns and adjectives will differ in the following way:

(21) a. Noun
[seca]_N

b. Adjective
[[sec_{Root}]_{Adj} [o_{Inf}]_{Masc}]_{Adj, Masc}

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