Contextual Markedness in Brazilian Portuguese Size Morphology

Tarcisio Dias

1. Introduction

In this paper I examine gender and class asymmetries in Brazilian Portuguese (BP) size morphology, i.e., diminutive and augmentative formation, and propose that they instantiate markedness effects. More specifically, I claim that markedness effects may be contextually triggered, that is, activated in the course of the morphosyntactic derivation. This view departs from Calabrese's (2005, 1995), who argues that markedness is universally determined but it's either active or inactive in the grammar of a language, which implies that its effects are a general property of the language, and not a property of specific constructions. Here, markedness effects are claimed to be construction-specific and tied to particular derivations.

It has been observed that marked elements resist an idiosyncratic phonological exponence (Calabrese 2011). For instance, as "shy" exponents, marked forms tend to historically "go out of use" more often than unmarked ones. One example is the obsolescence of dual morphology (marked) in Greek, which at later stages has been replaced by the syncretic plural (unmarked) morpheme (Calabrese 2011:289).

I adopt the idea that markedness effects result from constraints on the combination of morphological features (Calabrese 1995,2011, 2008, 1998, Arregi & Nevins 2007, Nevins 2008, Noyer 1997). Such effects can be characterized as markedness statements, which correspond to an "illegal" combination of morphological features. If a markedness statement is active, repair operations are triggered to fix the offending combination. For example, let's say [X,Y] is marked; i.e., $[X,Y]^{M!}$. In such case, either (1a) or (1b) could be triggered as a repair strategy.

(1) a. $X \rightarrow \emptyset$ / _ Y

b. $Y \rightarrow \emptyset$ / X _

One of the consequences of the analysis, which adopts the Distributed Morphology (DM) framework (Halle & Marantz 1993), is that the constraints on the combination of features leading to markedness must target terminal nodes of morphosyntax containing abstract features, rather than vocabulary items (sound/form pairs that assigns exponents to syntactic nodes).

The paper is organized as follows. In section 2 I show that feminine gender and thematic class III in Brazilian Portuguese are marked with respect to masculine gender and classes I and II, respectively. I also show that markedness is a relative concept. In section 3 I show a gender asymmetry in BP augmentative formation, and in section 4 a thematic class asymmetry in diminutives. Section 5 presents the analysis, where I account for the distribution of theme vowels in the language and argue that markedness effects may be contextually triggered. I section 6 I conclude.

2. Relative markedness

Brazilian Portuguese has two grammatical genders, namely, MASCULINE (unmarked), and FEMININE (marked). Evidence for the unmarked status of the masculine is given in (2); based on Harris (1991:43). When genderless categories such as prepositions and adverbs are used as nouns, the resulting gender must

* Tarcisio Dias, University of Connecticut, tarcisio.dias@uconn.edu. I thank people from UConn Linguistics and the WCCFL 42 audience at the University of California, Berkeley, for helpful comments and worthwhile thinking questions. I would specifically thank Andrea Calabrese and the members of the Morphology Reading Group at UConn for the constant sharing of knowledge and of a good time.

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invariably be masculine: note that the nominal versions of *para* ('to') and *calmamente* ('calmly') trigger masculine concord where applicable; e.g., determiners, adjectives, participle).[1]

(2) a. O *para* é muito usado no português.
the.M to is very.M used.M in.the Portuguese
'The (word) *para* is used a lot in Portuguese'

b. O *calmamente* dela não é muito calm-o.
the.M calmly of.her not is very.M calm-M
'Her calmness is not very calm'

BP nouns are sorted into three thematic classes, each identified by a theme vowel, which corresponds to the suffix attached to the root, i.e., *-o*/*-a*/*-e* (Camara Jr. 2019, Bermúdez-Otero & Luís 2011, Sandalo 2021). We see in (3) that when gender is uninterpretable, i.e., when MASCULINE doesn't denote 'male', and FEMININE doesn't denote 'female', class is unpredictable. Note that each class contains both masculine and feminine nouns.

(3)

Nouns		MASC		FEM	
Class I	*-o*	*livro*	'book'	*libido*	'libido'
Class II	*-a*	*planeta*	'planet'	*mochila*	'backpack'
Class III	*-e*	*filme*	'movie'	*sede*	'thirst'

When gender is interpretable, i.e., when masculine is understood as male and feminine is understood as female, class is fully predictable: masculine nouns are class I (end in *-o*; 4a) and feminine nouns are class II (end in *-a*; 4b). Class III, however, cannot be predicted from gender (4c).[2]

(4) a. *gato* 'male cat' (class I)

b. *gata* 'female cat' (class II)

c. *peixe* 'male or female fish' (class III)

I take the facts above to indicate that class III is marked with respect to classes I and II, which is represented in (5). [Read $x > y$ as 'y is marked relative to x]

(5) Class I/II > Class III

Interestingly, even though class III is marked with respect to classes I and II, the latter do not share the same markedness status. Masculine nouns ending in *-o* are undoubtedly unmarked when compared to feminines in *-o*, which are particularly rare; the same is observed for Spanish, see Harris (1991). Feminines in *-a*, on the other hand, are unmarked relative to masculines in *-a* (which are more common than class I feminines). The relative unmarkedness of class II feminines can be tied to its predictability: most feminine nouns are class II, e.g., *mochila* ('backpack'), due to a redundancy rule assigning (unmarked) feminine nouns to class II (Harris 1991).[3]

Even though class I masculines (CIM) and class II feminines (CIIF) are unmarked, the latter having its class predictable from gender, class I feminines (CIF) and class II masculines (CIIM) do not share the same markedness status. The evidence comes from productivity. CIIM nouns are pretty common, e.g., *planeta* ('planet'), *cometa* ('comet'), *cinema* ('movie theater'), *dilema* ('dilemma'), *califa* ('caliph'). CIF nouns,

[1] See also Camara Jr. (2019) and Bobaljik & Zocca (2011) for the marked status of feminine in BP, and Harris (1991) for its markedness in Spanish).

[2] Common gender nouns are attested in all classes; e.g., *piloto* ('pilot'; male or female), *artista* ('artist'; male or female), *estudante* ('student'; male or female).

[3] This rule makes class predictable from gender when the noun is unmarked and feminine.

on the other hand, are rare (I could honestly think only about *tribo* ('clan') and *libido* ('libido').[4] Their relative markedness is represented in (6).

(6) CIIM > CIF

I therefore conclude that the relative markedness of Brazilian Portuguese nouns are as in (7). Note that even though both CIM and CIIF nouns are unmarked with respect to class (cf. note 3), the gender of the latter pushes it up further on the scale.

(7) CIM > CIIF > CIIM > CIF
livr<u>o</u> *mochil<u>a</u>* *planet<u>a</u>* *libid<u>o</u>*

Another effect of the relative markedness of class II feminines when compared to class II masculines can be seen in (8), where determiner-noun concord completely obviates class. In particular, note that the form taken by the determiner in (8d) is homophonous to the class II theme vowel *-a*. A determiner, however, could never take the class II form when constructed with a class II masculine; cf. (8b), (8e).

(8) a. o livr-o
the.M book-TV.I(M)

b. o planet-a
the.M planet-TV.II(M)

c. a camis-a
the.F shirt-TV.II(F)

d. a libid-o
the.F libido-TV.I(F)

e. ∗a planeta
the.M planet-TV.II(M)

3. A gender asymmetry in Brazilian Portuguese augmentatives

BP augmentatives are formed via suffixation of *-ão* or *-on* to a base root (9), where *-ão* derives masculine augmentatives (9b), and *-on* derives feminine augmentatives (9d) . Also note that masculine augmentatives are athematic and that feminine augmentatives end in *-a* (they belong to class II).[5] I'm assuming *-ão* and *-on* are contextual allomorphs of the augmentative morpheme AUG, where *-on* is triggered by FEM and *-ão* is the elsewhere form.

(9) a. livro
book (CIM)

b. livr-ão
book-AUG (CIM)
'big book'

c. mochila
backpack (CIIF)

d. mochil-on-a
backpack-AUG-TV.II (CIIF)
'big packpack'

Now observe (10). Note that *-on* is restricted to feminine bases, (9d,10b), whereas *-ão* can combine with either (9b,10d).

(10) a. livro
book (CI**M**)

b. ∗livr-on-a
book-AUG-TV.II
(intended: CII**F**)

[4] I am disregarding truncated forms such as *foto* (<*fotografia*; 'picture'), *moto* (<motocicleta; 'motorcycle'), and *loto* (<*loteria/lotérica*; 'lottery'), whose non-truncated forms all end in *-a*. They seem to share a distinct markedness status when compared to the "true" class I feminines.

[5] Ortography might lead to confusion here. *-ão* is a stressed morphemic nasal diphtong and cannot be segmented into *-ã-o*. In other words, the *-o* in *-ão* is **not** the class I theme vowel. The athematicity of masculine augmentatives is purely phonological: theme vowels are always unstressed, and neither formative ∗*-ãoo* nor ∗*-ão.o* is allowed (even for non-augmentative words such as *avião* ('plane') and *pão* ('bread'), so a readjustment rule should convert either into *-ão*, leading to an athematic form. For concreteness, they will be treated as the unmarked class I.

c. mochila
backpack (CII**F**)

d. mochil-ão
backpack–AUG (CI**M**)
'backpacking' (idiomatic)
'big backpack' (literal)

The generalization is that **masculine augmentatives may have a feminine base root, whereas feminine augmentatives must have a masculine base root**. This is depicted in (11). I rely on the common DM assumption that roots are category-less elements that must merge with a categorizer head (*n*, *v*, *a*), and also assume that that gender is a property of the categorizer, and not of the root; cf. Kramer (2015), i.a.

(11) a. $[[\ \sqrt{Root}\ n_{\text{MASC}}\ ]\ \textit{-ão/*-on}\ ]]_{\text{MASC/*FEM}}$
b. $[[\ \sqrt{Root}\ n_{\text{FEM}}\ ]\ \textit{-ão/-on}\ ]]_{\text{MASC/FEM}}$

4. A class asymmetry in Brazilian Portuguese diminutives

BP diminutives are formed by adding *-inh* to a base root, and it is followed by a theme vowel. While unmarked theme vowels (*-o* in masculines, *-a* in feminines) are typically preserved in diminutives (12), the marked class III theme vowel (*-e*) never is (13).

(12) a. livr-***o*** → livr-inh-***o***
book-TV.I book-DIM-TV.I

b. mochil-***a*** → mochil-inh-***a***
backpack-TV.II backpack-DIM-TV.II

(13) a. film-***e*** → film-inh-***o*** / *filminh***e**
movie-TV.III movie-DIM-TV.I

b. sed-***e*** → sed-inh-***a*** / *sedinh***e**
thirst-TV.III thirst-DIM-TV.II

So, (marked) class III nouns are unable to retain its theme vowel *-e* in diminutives, whereas class I and II nouns can. I take this asymmetry to be a markedness effect, depicted in (14).

(14) a. $\{\sqrt{Root_{\text{I}}}\}$-{DIM}-{*o*}
b. $\{\sqrt{Root_{\text{II}}}\}$-{DIM}-{*a*}
c. $*\{\sqrt{Root_{\text{III}}}\}$-{DIM}-{*e*}

5. Analysis

To account for the distribution of theme vowels, in this section I propose vocabulary item entries for BP theme vowels. I assume that theme vowels realize a morphosyntactic terminal node inserted post-syntactically adjoined to the categorizer *n* as ornamental morphology (15); see Calabrese (2023), Oltra-Massuet (1999), and Oltra-Massuet & Arregi (2005).

(15) $[\ \sqrt{Root}\ [\ n\ \text{TV}\ ]_n]_n$

Considering that theme vowels are in a local configuration with the root,[6] the insertion of theme vowels may thus access information on the root. Crucially, I take classes to correspond to root diacritics,

[6] Locality is being used in the sense of Embick (2010, 2013), Embick & Shwayder (2018), and Calabrese (2015, 2019).

which can be understood as abstract features only legible at the PF interface. Such features trigger the insertion of ornamental morphology according to the Vocabulary Items in (16). The Redundancy Rule in (17) assigns unmarked feminine roots to class II. This can be implemented as contextually-triggered feature insertion. After the rule is applied, *-a* is inserted according to (16b)

(16) a. /-e/ ⟷ [TV] / $\sqrt{Root}_{[III]}$ e.g., $film_{III}$-*e*

b. /-a/ ⟷ [TV] / $\sqrt{Root}_{[II]}$ e.g., $planet_{II}$-*a*

c. /-o/ ⟷ [TV] / $\sqrt{Root}_{[I]}$ e.g., $libid_{I}$-*o*

d. /-o/ ⟷ [TV] e.g., *livr-o*

(17) $\sqrt{Root} \longrightarrow \sqrt{Root}_{[II]} / n_{FEM}$

Note that root diacritics are not needed to account for the distribution of unmarked nouns: the redundancy rule in (17) assigns unmarked ("diacriticless") feminines to class II, and unmarked masculines will receive *-o* due to the Elsewhere insertion rule in (16d).

That the *-o* in (16c) and the *-o* in (16d) are not the same can be seen in (18).

(18) a. livr-**o** → livr-inh-**o** / ∗livr-inh-**a**
book-TV.I (M) book-DIM-TV.I (M) book-DIM-TV.II (F)

b. libid-**o** → ?libid-inh-**o** / ∗libid-inh-**a**
libido-TV.I (F) libido-DIM-TV.I (F) libido-DIM-TV.II (F)

The vowels don't behave the same in diminutive formation: note the *-o*'s "resistance" to follow the diminutive morpheme in (18b).

In the following, I will argue that the asymmetries above instantiate markedness effects contextually triggered.

As seen in the introduction, markedness effects are understood here as markedness statements, that is, a constraint on the combination of certain features (19) (Y might be null; in other words, I'm assuming that a markedness statement can be composed of a single feature).

(19) $[X,Y]^{M!}$

"M!" indicates that the feature bundle [X,Y] is marked. If active on a language, operations such as feature deletion (20a) or obliteration (20b), i.e., terminal node deletion; cf. Arregi & Nevins (2007) must be employed to derive a legitimate morphosyntactic structure (one where these features don't occur together).

(20) a. $X \longrightarrow \emptyset / {}^{M!}[\_,Y]$

b. $[X,Y]^{M!} \longrightarrow \emptyset$

It has been argued that feature deletion triggers the insertion of a feature with the opposite value; cf. Noyer (2007), Calabrese (2008). Whereas feature deletion may lead to the insertion of a less specified form on the terminal node, obliteration may lead to the pronunciation of a form whose exponent does not match the abstract morphosyntactic features, i.e., syncretism.

To account for the gender asymmetry in augmentatives, I propose that [FEM] is a markedness statement (MS) that is only activated in the context of the augmentative morpheme (AUG). This is depicted in (21).

(21) [FEM] ⟶ $[FEM]^{M!}$ / _AUG

Once active, I propose the deletion rule in (22). As a default value, there is no need to assume an abstract [MASC] is inserted. I take the "emergence" of masculine instead of feminine in these cases to diagnose for feature deletion (and not obliteration). Deletion of the marked gender will necessarily turn the word "masculine", which implies the absence of gender (see Camara Jr. 2019).

(22) $[\text{FEM}]^{\text{M!}} \longrightarrow \emptyset$

This accounts for the derivation of *mochilão* ('big backpack'), which is a masculine augmentative based on a feminine root (*mochila*). One might wonder why the feminine augmentative word *mochilona* could ever be derived. I argue that these formations don't have the same structure. Namely, the augmentative morpheme in *mochilona* is not in a local relation with the root, and therefore cannot trigger [FEM] deletion. Evidence for this claim is provided below.

Masculine augmentatives, e.g., *mochilão*, can be freely formed based on feminine roots, just like feminine augmentatives, e.g., *mochilona*. Interestingly, only the former can receive a non-compositional reading.[7] Remember from (10) that *mochilão* also means 'backpacking', which corresponds to a way of traveling. This is not a quirk of this word in particular, but a systematic pattern in augmentative formation when there is base-derivative gender mismatch. When there is no gender mismatch, only a compositional reading is allowed.

(23) a. *caneta* → *canetona* / *canetão*
pen (F) *big pen* (F) *marker* (M)

b. *colcha* → *colchona* / *colchão*
quilt (F) *big quilt* (F) *mattress* (MASC)

I take these facts as indication that *mochilona* and *mochilão* have different structures, where the augmentative in the former is not local to the root, and therefore cannot serve as the context for the application of rule, neither be interpreted idiomatically with the root.

Now, to account for the class asymmetries in diminutives, I propose that class III becomes marked in the context of a diminutive morpheme (24a). Once active, I propose the deletion rule (24b) eliminates this feature.

(24) a. $[\text{III}] \longrightarrow [\text{III}]^{\text{M!}} / \_\ \text{DIM}$

b. $[\text{III}]^{\text{M!}} \longrightarrow \emptyset$

The deletion of the class III feature will strip the root of its class diacritic, and therefore theme vowel insertion will be fully predicted from gender (*-o* for masculines, *-a* for feminines).

An important distinction from Calabrese's (2011) account is that the activation of an MS is parametric. Here, activation is a property of the morphosyntactic derivation. Another difference regards the universal status of MSs: theme vowels are language specific and their markedness status couldn't possibly stem from Universal Grammar. It seems, however, that speakers are very sensitive to the marked status of both feminine gender and classes, but such effects only emerge in particular contexts.

The descriptive nature of the analysis above shouldn't undermine the achievement of the account. What I have shown is that markedness statements can be derivationally formed, namely, that certain features may become marked in particular constructions, which is a novel claim. The prediction of the proposal is that we expect to find asymmetries between marked and unmarked values (tied to particular constructions) even in languages where such features have not been characterized as marked.

6. Conclusion

In this paper I have shown that Brazilian Portuguese augmentative and diminutive formation display gender and class asymmetries, respectively, that can be understood as markedness effects. The analysis also support the view of theme classes being encoded as abstract features on the root (rather than a property of vocabulary items as claimed by Gouskova & Bobaljik (2022). I have also claimed that markedness statements can be derivationally formed, that is, they are a property of specific constructions rather than a property of the language as a whole.

[7] See Armelin (2014).

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