*Figadinho: defectivity of the diminutive and the three-syllable window

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ABSTRACT: We discuss the oddness/unavailable grammaticality of the *-inho* diminutive form of Brazilian Portuguese proparoxytone nouns such as **figad-inho* 'small liver'. This observation is supported by a grammaticality judgment behavioral experiment, which showed affixation with *-inho* yielding lower acceptability and higher reaction times than that with the allomorph *-zinho*. We propose this ill-formedness is due to a requirement for stress-based prominence of at least a certain level on the lexically specified initial syllable. Given a model of primary and secondary stress assignment in terms of Simplified Bracketed Grids, we argue that secondary stress on putative **figadinho* would fall outside the three-syllable window at the lexical level – a problem that does not arise with the augmentative suffix *-ão*, when compared to its allomorph *-zão*. At the Post-Lexical level, addition of compounding suffix *-zinho* allows lexical stress on the base to be successfully maintained. We also demonstrate the entirely parallel explanation for allomorph selection with *-ez/-eza* for proparoxytone adjectives such as *tímido* 'timid'.
KEYWORDS: Diminutive; Lexical Phonology; Proparoxytones; Secondary Stress.

RESUMO: Nós discutimos o caráter marginal ou agramatical da forma diminutiva em *-inho* de substantivos proparoxítonos do português brasileiro, como **fígadinho*. Essa observação é sustentada por um experimento comportamental de julgamento de gramaticalidade, que revelou menor aceitabilidade e tempos de reação mais longos para a afixação com *-inho* do que com o alomorfe *-zinho*. Nós propomos que essa má-formação se deve à exigência de um grau mínimo de proeminência acentual na sílaba inicial lexicalmente especificada. Com base em um modelo de atribuição de acento primário e secundário usando Grades Métricas Simplificadas, demonstramos como o acento secundário na forma hipotética **figadinho* recairia fora da janela de três sílabas no nível lexical — problema que não acontece com o sufixo aumentativo *-ão*, quando comparado com seu alomorfe *-zão*. No nível pós-lexical, a adição do sufixo de composição *-zinho* permite preservar o acento lexical da base. Demonstramos também como uma explicação paralela se aplica à seleção dos alomorfes *-ez*/*-eza* em adjetivos proparoxítonos como *tímido*.
PALAVRAS-CHAVE: Diminutivos; Fonologia Lexical; Proparoxítonas; Acento secundário.

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Introduction

The diminutive in Brazilian Portuguese (BP) is often thought to be extremely productive, in fact applying even to certain participial forms such as *namorandinho* 'dating-dim.' or salutations such as *tchauzinho* 'goodbye-dim.' As for the alternation between *-inho* and *-zinho*, the phonological generalization is that the latter is required for bases with final stress (e.g. *ʒacaré-zinho* 'alligator-dim.', *tchau-zinho*) or final consonants (e.g. *amor-zinho* 'love-dim.', *ʒornal-zinho* 'newspaper-dim.'), and has often been claimed to form a separate prosodic word from the base (Menuzzi, 1993; Guzzo, 2018), akin to that of a compound, or a post-lexical suffix (also known as Level 2 in Lexical Phonology and Morphology), such as adverbial *-mente*. It may therefore come as somewhat of a surprise that a particular set of nouns, which have no semantic reason to block the diminutive, are completely unattested (and judged as ill-formed) with the regular diminutive *-inho*, namely proparoxytone nouns such as *fígado* 'liver', *fósforo* 'matchstick', *máscara* 'mask' and *tímido* 'timid'.[4]

The forms **figadinho, *fosforinho, *mascarinha, *timidinho* are judged as odd by native speakers, and according to Postma (2017), these might be ushered under the umbrella of what we call 'defective' forms – in the same way that the 1sg. of verbs such as *abolir* 'to abolish' or *lagar* 'to lag' is judged as odd/impossible. It is this fact that we will attempt to derive (and connect to other stress-based phenomena in BP) in the rest of this paper.

While forms with the augmentative *-ão* are allowed for such bases (e.g. *figadão, fosforão, timidão*, however semantically infrequent these may be), the diminutive has a phonological ban on it. As for the Post-Lexical version of the diminutive *-zinho*, we can understand why it is required for final-stressed vowels (to avoid hiatus or vowel deletion of the final-stressed vowel, which would be triggered by *-inho*) or for consonant-final bases (to avoid resyllabification of the final consonant, which would cause allophonic changes as well), but not why it is required for forms like *fígado*, as the addition of *-inho* would not cause either deletion of a stressed vowel nor

[4] Our goal in this paper is not to provide an exhaustive list of all proparoxytones for which the generalization holds, and indeed there are some exceptions. The ill-formedness or oddity, however, of diminutives with proparoxytones such as *pirâmide* 'pyramid', *edícula* 'annex', *xícara* 'teacup', *lágrima* 'tear', *câmera* 'camera', *lâmpada* 'lamp', *número* 'number' is striking, even if a few high frequency forms (e.g. *rápido* 'quick', *música* 'music') accept diminutives in *-inho/-inha* (see Rodrigues, 2025 for discussion of frequency effects of this sort).

resyllabification of a final consonant. As pointed out in Postma (2017), the Post-Lexical form *-zinho* can be added to almost any base, without causing changes to the stem, and in fact often without causing any idiosyncratic or pejorative semantics, thus giving rise to possible doublets such as *o poetinha*[5] 'the little poet (dismissive)' vs. *o poetazinho* 'a small poet', where *-inho* can bear the dismissive connotation. Thus, the compatibility of *-zinho* in cases such as *figadozinho* is entirely unsurprising. However, why can't the lexical-level (or Level 1) suffix *-inho* be added to such proparoxytone bases?

We seek an explanation that ties this lacuna to other phenomena in BP, and in particular, start with an observation on the apparent allomorphy found with the deadjectival suffixes *-eza/-ez*. The former is overwhelmingly more productive, and found with paroxytone bases ([final vowels that undergo deletion in parentheses] *trist(e)-eza* 'sad-ness', *bel(o)-eza* 'beautiful-ness') and oxytone bases (*gentil-eza* 'kind-ness'). However, the latter is much less productive, and found mostly with proparoxytone bases (e.g. *timid(o)-ez* 'timid-ness', *rigid(o)-ez* 'rigid-ness'); in fact, there seem to be no proparoxytone bases with *-eza*.[6] We will claim that the requirement for proparoxytone bases to have *-ez*, instead of *-eza*, is stress-based and parallel to that of *-zinho* instead of *-inho*. We will formalize this requirement in terms of the three-syllable window, [7] extended here to cases of lexical marking and its potential satisfaction through secondary stress.

Before developing our analysis, we will provide background by discussing primary and secondary stress in BP. In Section 2, we develop claims about primary and secondary stress to BP and discuss iterative foot construction. In Section 3, we dive deeper into BP stress, including a discussion on dactyls. In Section 4, we analyze BP primary stress according to the Simplified Bracketed Grids (SBG) Framework of Idsardi (1992) and in Section 5 we do so for secondary stress. Finally, in Section 6 we present experimental results attesting the dispreference for *-inho* in proparoxytones

[5] The form *o poetinha* 'poet-dim.' keeps its theme vowel *-a-* because *-inh-* patterns like an 'infix' between the stem and the theme vowel (Armelin, 2018). On the other hand, the freestanding Post-Lexical suffix *-zinho* may contain its own gender agreement; cf. also triplets like *a foto, a fotinh**o**, a fotozinh**a***.

[6] Though there are non-proparoxytone bases with *-ez*: *surd(o)-ez* 'deaf-ness', *polid(o)-ez* 'polite-ness', *maci(o)-ez* 'soft-ness', *robust(o)-ez* 'robustness'.

[7] The three-syllable window is a typological constraint on stress placement. In many languages, the main (primary) word stress is limited to the final three syllables of a word. In other words, stress must fall on the ultimate, penultimate or antepenultimate syllable, and syllables further to the left are not eligible to bear primary stress (Hayes, 1995; Halle & Vergnaud, 1987; and cf. Wetzels, 2007 and Hermans & Wetzels, 2012 for the three-syllable window in BP).

compared to paroxytones, and we present our main analysis. Section 7 concludes, and Section 8 pays tribute to Ana Paula Scher, to whom this journal issue is dedicated.

1. Claims about primary and secondary stress in BP

We begin by defining iterativity in phonology, which, following classic work by Howard (1972), we take to mean "Do not apply X all at once". A clear example comes from Mandarin Chinese 3 → 2 tone sandhi, which changes a 3rd tone to a 2nd tone before another 3rd tone. In a string of all 3-tone words, if we observe, for example, that *Lao3 Li3 mai3 hao3 jiu3* 'Old Li buys good wine' becomes 2 3 2 3 3, we see that this is clearly a case of not-applying-all-at-once, where each potential target of the rule is individually evaluated for whether it meets the structural description before applying the structural change, and then moving on to the next potential target. In what follows, we develop an iterative model of secondary stress assignment that accounts for the predictable optionality of secondary stress in some forms, but not others. On our analysis, this optionality follows from the nature of different iterative foot-constructions rules, which apply successively, depending on the overall syllable count of the word. More specifically, what matters is the number of pretonic syllables, i.e., how many of those precede primary stress.

When it comes to primary versus secondary stress, we specifically wish to take the terms primary and secondary to encode a literal temporal ordering: primary stress is assigned to a word before any secondary stress can be assigned. As such, we follow work such as Hulst (1996) and Rubach & Booij (1985: 295). The latter claim that main stress and nuclear stress "[MSR, NSR] must precede euphony rules". Such euphony rules would be the ones accounting for alternating secondary stress in Polish words such as *rèwolùcjonistámi* 'revolutionary (instr. pl.)', for instance. More specifically, we adopt:

(1) First stress is assigned in a lexical stratum, and second stress in a post-lexical stratum.

One consequence of (1) is the set of observations in Collischonn (1994), who observes that secondary stress in BP is fed and/or bled by late phonological rules, such as glide formation. A more obvious consequence is the observation that secondary

stress in BP is never lexically idiosyncratic. We also make the additional following claim for secondary stress:

(2) Iterative foot construction is only available in the post-lexical block in BP.

As a consequence of (2), the kind of iterative footing that creates alternating secondary stresses in words such as *Càragwàtatúba* (toponym) is claimed to be derived entirely by creating new headed binary feet, one at a time, in the post-lexical block. In so doing, we follow work such as Halle (1998: 554): "[i]terative Foot Construction [...] constructs binary feet iteratively by inserting right parentheses from left to right. This rule is part of the noncyclic block of rules, whereas the others are part of the cyclic block".

In the current paper, we cannot engage in too much depth with the debate about the difficulties of acoustic correlates for secondary stress (Moraes (2003), though see Hualde & Nadeu (2014), who provide supporting evidence for Roca's (1986) claims about secondary stress in Spanish). It remains a fact that secondary stress is often difficult to ascertain purely acoustically, but it generally becomes quite clear in slower speech registers, e.g., a recorded announcement on Radio MEC affirming *edùcação* 'education'. In fact, the BP patterns largely parallel those described in the literature for languages such as Polish and Indonesian (Cohn, 1989). The results of observing consistent optionality in secondary stress restricted to words with an odd-number of syllables before the primary-stressed syllable – originally noted by Collischonn (1994) – have been extended to longer words over years of observing the teaching of BP phonology to native speakers. Experimental results such as those from Abaurre et al. (2014) corroborate this intuition.

Given (2), one direct result of the present paper is to demonstrate how the lack of iterativity within the lexical block can account for the ill-formedness of certain metrical forms with *-inho* and *-ez*, thus enabling an explanation of defective proparoxytone diminutives. Along the way, as we present a model of iterative foot construction for secondary stress, we present a novel empirical claim for BP, namely the optional availability of medial dactyls in secondary stress. We first turn to the mechanisms of iterative footing that allow both binary headed feet (familiar from cases such as *Càragwàtatúba*) along with headed ternary feet – specifically dactyls.

2. BP stress and dactyls

As is well-known across Romance languages such as Spanish and Italian, Portuguese non-verbs show a main-stress pattern that respects the three-syllable window from the right edge. The most marked main stress is antepenultimate/proparoxytone, the most common main stress is penultimate/paroxytone, and another less common pattern (though significant, especially in loanwords from Tupi-Guarani, French, and other sources) is final/oxytone stress:

(3) Main stress: three-syllable window
   a. Proparoxytone: *abóbora* 'pumpkin', *edícula* 'annex', *xícara* 'teacup'
   b. Paroxytone: *gáto* 'cat', *mésa* 'table', *mèzaníno* 'mezzanine'
   c. Oxytone: *fubá* 'cornmeal', *ʒacaré* 'alligator', *andár* 'floor'

Secondary stress is often easily detected in morphologically non-complex words, e.g. toponyms like *Àpalàchicóla* (which of course were probably morphologically complex in their original source language but are not to English speakers). We begin by describing the pattern of secondary stress in Brazilian Portuguese, beginning with 4-syllable words. When the main stress is paroxytone (which is, again, essentially the default), secondary stress is found on the initial syllable, thereby creating an alternating stress pattern of strong-weak-strong-weak, with prominence on the first and third syllables:

(4) Secondary stress in 4-syllable penult-main-stress words: trochees
   a. *mèzaníno* 'mezzanine', *àlmofáda* 'cushion' (Trochaic Pattern)

As will become apparent later, we view (4) as the result of initially constructing a trochee for main stress on the rightmost edge. Subsequently, secondary stress groups the pretonic syllables into another left-headed binary foot (a trochee), thereby assigning prominence to the first of these two pretonic syllables.

However, not all four-syllable words have this same pattern. Specifically, when the main stress is oxytone, there are multiple ways of grouping the resulting three pretonic syllables, yielding one of the first cases of optionality to be discussed. One of

the available options here is for the secondary stress to be assigned to the first of three pretonic syllables, thereby creating a left-headed ternary foot (in other words, a dactyl), as in (5-a) below. A second option is to follow the pattern of creating a pretonic trochee. Under this configuration, the second of the three pretonic syllables will be the most prominent among them, as a trochee is built immediately to the left of the main stress, as in (5-b).

(5) Optionality in secondary-stress of four-syllable final-stress words: dactyl or rhythmic

a. *màracuʒá* 'passionfruit', *àbacaxí* 'pineapple' (Dactylic Pattern)

b. maràcuʒá, *abàcaxí* (Trochaic Pattern)

At this point, we observe that, given a string of three pretonic syllables before the main stress, there is the dactylic option (creating a ternary foot, and yielding secondary stress on the third syllable), or the trochaic option (creating a binary foot, and yielding secondary stress on the second syllable). Clearly, the first option isn't available in words such as (4), in which there are fewer than three pretonic syllables. The second option, however, of creating a trochee before the main stress, is in fact not only available in (5-b), but also in three-syllable words with final stress, such as *ʒàcaré* 'alligator'.

The existence of a secondary stress on the first syllable (the result of a trochee) for words such as these can in fact be diagnosed by witnessing the result of the 'rhythm rule' operating under stress clash – the same one that is responsible for the alternation between the cardinal numeral *thirteèn* with final stress (as in 'eight plus five equals thirteen') and its retraction of stress in phrases such as *thírteen mén*, occurring when the main stress would otherwise clash with the subsequent stressed monosyllabic word. In such cases, stress retraction is found to the secondary stressed syllable in three syllable words. This pattern is also found in alternations such as *Tènnesée*, but *Ténnessee Wílliams*.

As observed by Sandalo & Truckenbrodt (2002), similar alternations can be found in Brazilian Portuguese in *café* 'coffee' alternating with *cáfe quénte* 'hot coffee'. A parallel case to the three-syllable clash retraction case is found with *ʒàcaré* 'alligator' alternating with *ʒácare bránco* 'white alligator'. The same type of retraction is documented for Italian by Nespor & Vogel (2007: 174-175 *apud* Brugnoli, 2024: 42),

in *metá tórta* ‘half cake’ retracting to *méta tórta*, and *ònoró Búdda* ‘he/she honored Buddha’ retracting to *ónoro Búdda*. Brugnoli (2024: 42) also offers single word examples of secondary stress variation for five-syllable Italian words, such as *càtamaráno* ‘catamaran’ and *catàmaráno*.

The parallel stress-retraction patterns observed in BP oxytone trisyllables, analogous to the English and Italian cases just discussed, therefore provide further evidence for secondary stress in BP.[8]

With this evidence in place, the generalization regarding the optionality of secondary stress is therefore as follows:

(6) Secondary stress can involve construction of a dactyl or a trochee, with optionality always observable in words with an odd number of pretonic syllables.

This generalization correctly predicts optionality in five-syllable words, as demonstrated by the following two canonical examples from Collischonn (1994):

(7) Optionality in secondary stress of five-syllable words: dactyl or rhythmic
   a. *tèmperatúra* ‘temperature’, *màraviλóso* ‘marvelous’ (Dactylic Pattern)
   b. tempèratúra, *maràviλóso* (Trochaic Pattern)

The dactylic pattern involves building a ternary foot to the left of the main stress – i.e., *(tèm pe ra) (tú ra)* – whereas the trochaic pattern groups the second and third pretonic syllables, leaving the initial one unfooted: *tem (pè ra) (tú ra)*. The nature of the groupings shown in parentheses will be developed in more depth below.

Importantly, it is not the overall count of syllables in the word that matters for optionality, i.e., it is not about “five-syllable words” per se. In fact, even in six-syllable words there is potential optionality. In this case, given four pretonic syllables, there is the option of creating a dactyl (and leaving the initial syllable unfooted) or of creating two trochees:

[8] Additional evidence for secondary stress may be found in the patterns of spontaneous nasalization described by Nevins & Pinheiro Costa (2019) in examples such as *ĩdentidáde* ‘identity’, in which nasalization, as a prominence-boosting process, targets onsetless and low sonority vowels particularly when they are secondary-stressed.

(8) Optionality in secondary stress of six-syllable words: medial dactyl or not

a. *caràgwatatúba* (toponym), *aràcaʒuénse* (demonym) (Dactylic Pattern)

b. *càragwàtatúba, àracàʒuénse* (Iterative Trochaic Pattern)

The examples in (8) have not been as closely inspected or observed in the literature as the ones in (7), but in fact they show two properties that are highly noteworthy for the current discussion. First, in (8-a) the dactylic pattern can involve the creation of a *medial* dactyl. What this means is that given four pretonic syllables, a left-headed ternary foot can be constructed among the fourth, third and second pretonic syllables, still leaving the first one unfooted: *ca (rà gwa ta) (tú ba)*. This observation is important because much of the literature on this type of secondary-stress optionality views the dactylic option as a kind of 'wild card' only available at the edges, e.g., at the leftmost edge. The existence of medial dactyls in BP has not, to our knowledge, been previously noted.

The pattern in (8-b), on the other hand, presents the first example in the discussion so far of *iterative* trochee construction. In this case, there are two binary feet before the main stress, which, as we will discuss later, can be modeled in terms of building each of these trochees one at a time, from right to left. If the remaining unfooted syllables are eligible for another trochee, a second trochee is then built. The iterativity of such patterns can be observed even more clearly when we turn to seven-syllable words, such as the toponym *Itaquaquecetuba*. Here, in fact, given five pretonic syllables, we find three options for these five syllables: dactyl-trochee, trochee-dactyl, or a right-to-left trochee-trochee construction, with the last of these leaving the initial syllable unfooted.

(9) Optionality in secondary stress of seven-syllable words:

a. *ì.ta.kwa.kè.se.tú.ba* (toponym) (Dactyl-Trochee Pattern)

b. *ì.ta.kwà.ke.se.tú.ba* (Trochee-Dactyl Pattern)

c. *i.tà.kwa.kè.se.tú.ba* (Iterative Trochaic Pattern)

Taking (9) into account, we can now see that the same word may involve three different patterns of secondary stress. This optionality results from the fact that, while moving from right to left and starting immediately after the main-stressed syllable,

either a trochee or a dactyl may potentially be built at each point. Then, moving from right to left once more, either a trochee or dactyl may again potentially be built.

A final, dramatic pattern of optionality in secondary stress may be found with the eleven-syllable word below, where the nine pretonic syllables may be grouped into either three dactyls (DDD; 3+3+3 = 9), into three trochees and a dactyl (TTTD; 6+3 = 9), or into an unfooted initial syllable, a trochee, and two dactyls (xTDD; 2+3+3 = 8).[9]

(10) Optionality in secondary stress of eleven-syllable words:

a. *ìn.cons.ti.tù.sjo.na.lì.si.ma.mén.te* 'very unconstitutionally' (Iterative Dactylic; DDD)

b. *ìn.cons.tì.tu.sjò.na.lì.si.ma.mén.te* (Mixed Trochaic-Dactylic; TTTD)

c. *in.còns.ti.tù.sjo.na.lì.si.ma.mén.te* (Stray Initial + Mixed Dactylic-Trochaic; xTDD)

These patterns suggest iterativity in the sense of the repeated application of a particular relation, namely the right-to-left grouping of pretonic syllables into dactylic or trochaic feet.

We can now connect this exposition of secondary stress to the ineffability of **figadinho*. As should be clear by now, there 'should' be a secondary stress on the initial syllable *fi*, given a trochaic pattern. Why, then, can this not 'save' this otherwise ungrammatical option? To answer this question, we must further develop a model in which iterative foot construction, responsible for secondary stress, occurs only in the post-lexical block of the phonology. We begin by introducing the specific mechanism for iterative foot construction adopted here, namely the Simplified Bracketed Grids framework of Idsardi (1992).

3. Main stress derivations in the Simplified Bracketed Grids (SBG) framework (Lexical Block)

As noted above, Brazilian Portuguese is often described in terms of the three-syllable stress window (cf. footnote 7). We follow work such as Wetzels (2007), in which penultimate stress is assigned by default and stress assignment involves an

[9] As the pattern TTTD is found, the pattern DTTT is also predicted; similarly, as the pattern xTDD is found, the patterns xDTD and xDDT are also predicted.

interplay of weight-sensitivity and lexical marking, especially for final and antepenultimate stress.[10]

In terms of representations, we propose that the penultimate stress involves the construction of a rightmost trochee, whereas final stress involves a unary final foot. As for antepenultimate stress, which is a marked structure in the language, we propose that it involves a specific marking of the final syllable as obviated for main-stress calculation, followed by a trochee built on the first two syllables.

(11) Main stress: antepenultimate, penultimate, or final. Lexically determined, with penult as overwhelming default

a. Paroxytones, *gáto*. **Rightmost trochee**
b. Oxytones, *ʒacaré*. **Rightmost unary stress**
c. Proparoxytones, *xícara*. **Final syllable obviated, trochee**

In the Simplified Bracketed Grids (SBG) framework of Idsardi (1992), one parenthesis is sufficient to group elements into a constituent. This is in part why it is called 'Simplified', as constituents do not need parentheses on both sides in order to be grouped. Once syllables are grouped into a constituent, this constituent is headed (e.g., left-headed or right-headed), and this head projects to the next level of prominence. The lowest level is called Line 0 (zero). The Lexical Block, where main stress is assigned, contains two operations on Line 0:[11]

(12) Line 0 Operations

a. End-Exclusion: insert a right-bracket before the endmost grid-mark.
b. Count-Two-Trochee: count two gridmarks from right-to-left and insert a left-bracket, projecting the left head upwards (Project-L). This rule is non-iterative in the Lexical block.

These two operations, ordered as in (12), work together to yield proparoxytone stress in words such as *xícara* 'teacup'. The first step, End-Exclusion, groups

[10] For additional discussion of weight-sensitivity and main stress in BP, see Bisol (1992) and Garcia (2017), among others.

[11] As other work has shown (cf. Idsardi, 2009), these kinds of operations are simple enough to be implementable by a Finite-State Transducer, though we do not enter into the details of such implementations here.

everything to the left of the final syllable, but as such leaves the final syllable stray and unfooted:

(13) Proparoxytones, Step One: End-Exclusion

x	x	)	x
xi	ca		ra

The second step involves right-to-left counting of two syllables, followed by insertion of a left bracket. This will close off the constituent and form a trochee. The left-head of this trochee projects upward, thereby gaining an additional level of prominence (i.e., main stress) for this syllable:

(14) Proparoxytones, Step Two: Count-Two-Trochee and Project-L

	x			
(	x	x	)	x
	xi	ca		ra

Proparoxytone main stress thus involves these two ordered steps in the SBG framework. On the other hand, paroxytone stress, the default pattern, is simpler, in that it involves only one of these operations, namely the latter (Count-Two-Trochee), as shown for the main stress of *mezaníno*:

(15) Paroxytones, Step One: Count-Two-Trochee and Project-L

			x	
x	x	(	x	x
me	za		ni	no

A right-to-left counting operation will take place and insert a left bracket. The bracket groups everything to its right into a constituent and projects the leftmost element as the head to the next line. The result is an additional level of prominence (i.e., main stress) for the second syllable from the right.

Oxytone Stress, on the other hand, involves an operation of End-Inclusion:

(16) Line 0 Operation:

a. End-Inclusion: insert a left-bracket before the endmost gridmark.

Thus, End-Inclusion will guarantee grouping of the final syllable into its own constituent. This constituent is headed and will project to the next line up.[12]

(17) Oxytones: End-Inclusion

```
                x
x    x    (     x
ʒa   ca         re
```

Assuming that Count-Two-Trochee applies to these forms as well, it simply needs to be stated that Line 1 is right-headed, as shown below:

(18) Oxytones (e.g. *ʒacaré*): End-Inclusion plus Count-Two-Trochee

```
     x                x
(    x    x    (      x
     ʒa   ca          re
```

(19) Oxytones (e.g. *ʒacaré*), Line 1 Operation: Insert a Right Bracket on Line 1, and Project the Rightmost Element:

```
                      x
     x                x     )
(    x    x    (      x
     ʒa   ca          re
```

An immediate result of (19) is that the antepenultimate syllable *ʒa* has a level of prominence on Line 1, one that is crucially distinct from the kind of secondary stress

[12] One possible alternative analysis for three-syllable oxytone words is a final iamb. However, to guarantee secondary stress on the initial syllable would require it to form a unary foot. In the current analysis, a unary foot is only allowed for main-stressed syllables. Indeed, support for the claim that this unary foot, when possible, shows a tendency toward expansion into a binary foot can be found in Carioca dialects (i.e., those from Rio de Janeiro). Carioca's final-stressed words such as *açaí* 'açaí fruit', Bangú (toponym) and *aló* 'hello' (upon answering the phone) are realized with an offglide schwa, as [iᵊ], [uᵊ], [oᵊ], respectively. For additional discussion of stress-to-weight effects in final position with glide-insertion in Carioca BP, see Nevins (2015).

assigned later in the Post-Lexical block. This follows naturally from the operations available in (12) and will be relevant for the analysis developed in the final section of this paper.

Having presented the three basic operations involved in the derivation of main stress within the Lexical Block, none of which are iterative, we now turn to the operations responsible for secondary stress in the Post-Lexical Block.

4. Secondary stress derivations in the SBG framework (Post-Lexical block)

Our adoption of the division of labor between the Lexical and Post-Lexical Blocks is grounded in a substantial body of research in Lexical Phonology and Morphology, from Kiparsky (1982) to more recent work such as Bermúdez-Otero (2012). In particular, it dovetails with proposals such as Lee's (1992), according to which certain affixes in Brazilian Portuguese bear a Lexical affiliation, while others bear a Post-Lexical affiliation. In Lee's analysis, suffixes such as *-inho* and *-ez/-eza* are Lexical, while others, such as *-zinho* and *-mente* are Post-Lexical.

Secondary stress is non-weight-sensitive, as shown by the fact that it is not necessarily attracted to heavy syllables in the optional variants *temp.pè.ra.tú.ra* 'temperature' and *à.mor.tè.ci.mén.to* 'damping'. Its Post-Lexical character is suggested by the fact that it need not inherit the same secondary stress pattern of the morphological base under affixation, as is evident in *es.cán.da.lo* > *ès.can.da.ló.so* 'scandal, scandalous' and *pi.co.lé* > *pì.co.le.zí.ɲo* 'popsicle, small popsicle'. In addition, diphthongization of hiatus vowels, a late/fast speech process, can restructure secondary stress, as in *si.bè.ri.á.no ~sì.be.rjá.no* 'Siberian', and epenthesis in slow/careful speech may do so as well: *ìn.dig.ná.do ~ in.dì.gi.ná.do* 'indignant'.

The operations responsible for secondary stress include an optional rule, Pre-Tonic Obviation (PTO), which skips/prevents the syllable immediately preceding main stress, or more generally any element footed by a left bracket, from being incorporated into a constituent. PTO therefore prevents the next operation in derivation, an iterative version of Count-Two Trochee (cf. (12)), from including the immediately pretonic syllable in its count. This is shown below for the dactylic output *tèmperatúra* 'temperature', which, as we now see, is not in fact a dactyl, but rather a trochee that involves skipping the first element from right-to-left.

(20) Post-Lexical Operations (e.g. for *tèmperatúra* vs *tempèratúra*)

a. Pre-Tonic Obviation (Optional!) a Right-Bracket before: _ x (

b. Iter-Troch (Iterative!): Count Two Gridmarks and Insert a Left-Bracket *(an iterative version of Count-Two-Trochee (12))*

In what follows below, a capital X denotes a constituent head. Note that Main Stress is already present in the input. If PTO applies, it leaves the first right-to-left syllable an unfooted orphan, caught between two parentheses that are oriented so as to exclude it from both directions:

(21) Pentasyllabics such as *temperatúra,* Step 1 (PTO):

x X) x (X x

Now iterative trochee construction from right-to-left can apply, resulting in a left-headed grouping of the first two syllables.

(22) Pentasyllabics such as *temperatúra*, with PTO already applied. Step 2 (Iter-Troch) is then applied, forming *tèmperatúra*

(X x) x (X x

As is evident now, the so-called 'dactylic' pattern is actually the result of the third syllable being skipped, and then a trochee being built to its left. (Note that as a result of this being the sequence of operations that yield surface dactyls, we perfectly expect medial dactyls to be able to arise.)

In (20), it was noted that PTO is optional. What if PTO does not apply? The result is shown below for the same pentasyllabic form *tempèratúra* 'temperature'. In this case, Iter-Troch starts right away, grouping the first immediately pretonic syllables, and then halts as it finds no further group of two syllables. The result is the alternating trochee pattern:

(23) Pentasyllabics such as *temperatúra*, without PTO. Step 1 is Iter-Troch, forming *tempèratúra*

x (X x (X x

In essence, the variability originally noted for BP by authors such as Collischonn (1994) is therefore simply the result of a single optional operation, namely PTO in (20). In fact, if PTO is always locally optional, that is, myopic as to whether the word as a whole has a certain number of pretonic syllables, then its optionality should always be available.

Such variability converges in the same extensional output (E-output) for tetrasyllabics such as *mèzaníno* 'mezzanine'. When PTO does not apply, the result is simply a right-to-left construction of a trochee, yielding secondary stress on the initial syllable:

(24) Tetrasyllabics without PTO. Iter-Troch becomes Step 1, forming *mèzaníno*

(X x (X x

Interestingly, when PTO *does* apply for this form, a right bracket will be inserted to the left of the immediately pretonic syllable, creating to its own left a constituent that is unary, but still a constituent. In other words, PTO still yields an orphan pretonic syllable stuck between two opposite-facing parentheses. The only difference is that what is to its left is a unary constituent. Thus, as there aren't *two* remaining syllables, Iter-Troch will be bled. The first syllable of the word will then be the head of the unary constituent:

(25) Tetrasyllabics with PTO, forming *mèzaníno*

X) x (X x

The result in (25) is significant, because it demonstrates that the optionality of PTO is truly local, and hence that it always has the optionality of applying. It also illustrates how, in some cases, even when PTO does apply, the output result is extensionally identical to that of when PTO does not apply. In our example, this was evinced by the secondary stress yielded on the first syllable of *mèzaníno* in two very different underlying derivations.

When the Post-Lexical Operations in (20a-b) may apply to tetrasyllabic oxytones, such as *maracuʒá* 'passion fruit', the application of PTO will yield *màracuʒá:*[13]

(26) Tetrasyllabic oxytones with PTO as Step 1 (including those that enter the Post-Lexical Block, cf. footnote 13)

x x) x (X

(27) Following PTO, Step 2 is Iter-Troch, forming *màracuʒá*

(X x) x (X

The result in (27) is similar to that of (22): with three syllables before the main stress, the seemingly dactylic option is in fact the result of PTO skipping the third syllable, followed by the creation of a binary trochee to its left. Should, however, PTO not apply, the result will be the alternating pattern *maràcuʒá*:

(28) Tetrasyllabic oxytones without PTO. Iter-Troch becomes Step 1, forming *maràcuʒá*

x (X x (X

Six-syllable words show optionality between a medial dactyl, as in *aràcaʒuénse* (demonym), and the rhythmic trochaic pattern, as in *àracàʒuénse*.[14]

(29) Hexasyllabics such as *aracaʒuénse*. With PTO as Step 1:

X x x) x (X x

(30) Following PTO, Step 2 is Iter-Troch, forming *aràcaʒuénse*

X (X x) x (X x

(31) Without PTO, Iter-Troch proceeds… iteratively! *àracàʒuénse*

(X x (X x (X x

[13] An important technical remark is in order here: during the Lexical block, oxytone words such as *maracujá* 'passion fruit' and *jacaré* 'aligator' (the latter as shown in (18)) involve a step of Iter-Troch that brackets the antepenultimate and penultimate syllables for purposes of primary stress computation. The brackets and gridmarks on these syllables are no longer relevant for primary stress and, through a process called *Tier Conflation,* are reduced back down to the input as shown in the beginning of the derivation in (26).

[14] As expected, the exact same two secondary stress possibilities are found in 5-syllable words with final stress, such as *à.ta.ràn.ta.ção* vs. *a.tá.ran.ta.ção* 'confusion' or *ì.ta.mà.ra.tí* vs. *i.tà.ma.ra.tí* (toponym).

In seven-syllable words, the phenomenon of Local Optionality, demonstrated above and discussed by Vaux (2008), shows that at each point of optionality for PTO, different derivational outcomes are attested. The possibilities are an Iterative Trochaic Pattern, as in *i.tà.kwa.kè.se.tú.ba* (toponym), a Trochee-Dactyl Pattern, as in *ì.t.kwà.ke.se.tú.ba*, or a Dactyl-Trochee Pattern, as in *ì.ta.kwa.kè.se.tú.ba*.

If PTO never applies in the five pretonic syllables, the result is a first round of Iter-Troch from right-to-left on the first two pretonic syllables, and then a second round on the next two pretonic syllables, yielding two pretonic trochees:

(32) Heptasyllabics with no PTO, then Inter-Troch, then no PTO, then Inter-Troch again, forming two pretonic syllables, as in *i.tà.kwa.kè.se.tú.ba*

x (X x (X x (X X

What if there is PTO in the first instance going right-to-left, but not in the second? In this case, a medial dactyl is formed:

(33) Heptasyllabics with PTO, then Inter-Troch, then no PTO, then Inter-Troch, forming a medial dactyl and an initial trochee, as in *ì.ta.kwà.ke.se.tú.ba*

(X x (X x) x (X x

If there is no PTO in the first instance going right-to-left, but it does apply in the second, an initial dactyl is formed:

(34) Heptasyllabics with no PTO, then Inter-Troch, then PTO, then Inter-Troch, forming a medial trochee and an initial dactyl, as in *ì.ta.kwa.kè.se.tú.ba*

(X x) x (X x (X x

Finally, if there is PTO in both instances, the result turns out to be extensionally equivalent to (33):

(35) Heptasyllabics with PTO, then Inter-Troch, then PTO, forming a medial dactyl, as in *ì.ta.kwà.ke.se.tú.ba*

X) x (X x) x (X x

Again, what was illustrated with this toponym is a case of local optionality (Vaux 2008): to 'create a dactyl or not' (via PTO) is locally decided, myopically from R→L. This contrasts to an analysis based on competing global footing constraints. An example of the latter would be UNIFORM-RHYTHM, requiring all secondary feet to have the same shape/foot type as the primary foot, in competition with a constraint requiring the initial syllable to be footed (e.g. FOOTED-σ1). In this scenario, while UNIFORM-RHYTHM >> FOOTED-σ1 yields the trochaic pattern in (32), FOOTED-σ1 >> UNIFORM-RHYTHM yields the other three patterns – but not the differences among them, i.e., the medial vs. initial dactyl.

Failing to predict the differences among the three first-syllable-footed options is a case of Undergeneration (cf. Hyde 2008). It is far from obvious how a new, third constraint could compel the Dactyl-Trochee pattern versus the Trochee-Dactyl pattern for five pretonic syllables before a trochee, as faithfulness is not at play (pace Riggle & Wilson 2005). However, this optionality is straightforwardly modeled with the two right-to-left operations proposed in (20): PTO is locally optional wherever it can apply, and trochee formation is iterative.

Although we will not show the full range of derivations for eleven-syllable words, it should be clear that, while the three-dactyl pattern shows UNIFORM-RHYTHM among the secondary stresses (though feet are not identical to that of the main stress), the two other patterns in (10b) and (10c) cannot be clearly decided among by any global set of constraints.

In sum, we may conclude that secondary stress in BP requires optionality of one operation, and iterativity of the other, from right-to-left. We claimed that this iterative trochee construction is limited to the Post-Lexical block, because (i) secondary stress is ubiquitously variable in such words (while primary stress is not); (ii) secondary stress is not weight-sensitive; (iii) secondary stress is not lexically determined; and (iv) secondary stress may be fed or bled by late speech rules such as diphthongization (Collischonn (1994); pace Buckley (2016) for Spanish).

5. The ill-formedness of proparoxytone diminutives and the three-syllable window

This paper began from the observation that diminutives of proparoxytone words are either ill-formed or odd, despite the otherwise high productivity of the diminutive. We first tested this intuition experimentally, by eliciting well-formedness judgments for diminutives with *-inho/inha* and augmentatives with *-ão/ona*, in both sSs (paroxytone words) and Sss (proparoxytone words).

Thirty students volunteered their time to participate in the experiment (mean age = 26.37 years, SD = 6.7; 11 identified as women). Importantly, none of them were students of Languages, Literatures and/or Linguistics. All gave informed consent. Stimuli were entered in a 2x2x2x2 design manipulating primary accent (paroxytone, proparoxytone);[15] word category (noun, adjective); frequency (high, low); and evaluative suffix (augmentative, diminutive). Each paroxytone, for example, was available both as high- and low-frequency nouns and high- and low-frequency adjectives, and both in the diminutive and in the augmentative (cf. Appendix, A1 for a complete grid with experimental conditions and stimuli examples). Word frequencies were obtained from the SUBTLEX-PT-BR corpus (Tang, 2012) for the base word, i.e., before the evaluative suffixes *-inho/-inha* and *-ão/-ona* were added. Half the participants saw a given word in its diminutive form, while the other half saw it in its augmentative form, yielding two experimental versions (cf. Appendix, A2-A4 for the complete list of stimuli).

Participants were presented with the regular and the derived words on the same screen, and were asked, at each trial, "Given the word __, how good is it for you to form the word __?" Their task was to indicate, on a Likert scale, a number from 5 (very good, depicted inside a green circle) to 1 (very bad, depicted inside a red circle). The text was centralized, in white color on a black screen, in Mono font 30 px. Figure 1 illustrates a sample trial.

Participants completed the test in person, on a 14″ laptop equipped with a mouse. Stimuli were displayed via the OpenSesame experiment builder software (Mathôt et al., 2012). The experiment started with a 6-trial training session, followed

[15] Crucially, our set of experimental items did not contain any of the reducible proparoxytones with liquids in the third syllable (e.g., *abóbora* > *abóbra* 'pumpkin', *fósforo* > *fósfro* 'matchstick'), since reduction would make them paroxytones.

by the 64-trial main test, of which 32 trials had target stimuli and the other 32 had distractors. Participants could take as long as they wished to complete a trial, but were instructed to answer as fast as possible, as we were interested in their most instinctual judgment. They were also told there was no correct answer, as this study was primarily interested in the judgmental nuances of each individual. After completing half of the trials, participants took a mandatory 25-second break. Each of the two blocks had the same amount of target stimuli and distractors (16 each), whose presentation was randomized within blocks.

Results were statistically analyzed on RStudio (v. 2026.1.1.403, Posit team, 2026), using the package lme4 (Bates et al., 2015) and afex (Singmann et al., 2025). We analyzed participants' acceptability ratings and reaction times (RTs) as dependent variables in two different linear models. The independent variables were the same in both models: primary stress (proparoxytone Sss, paroxytone sSs), evaluative suffix (augmentative, diminutive), frequency (high, low), word category (noun, adjective), and their interaction. In addition, both models were fit with random effects per subject and item, to account for their intrinsic variance.



Figure 1: Illustration of a sample trial, where participants read the sentence "Given the word *controle*, how good is it for you to form the word *controlinho*?" and rated the newly-formed word by choosing a number from 5 (green, "very good") to 1 (red, "very bad"). *Control* can mean both 'control' and 'controller'.

Tables 2 and 3 show main effects and interactions for each model, calculated via likelihood ratio tests. The only significant main effect for the RTs model was frequency ($\chi^2 = 5.58$, $p = .018$). The frequency interaction with suffix ($\chi^2 = 4.87$, $p = .027$) and

with suffix and word category ($\chi^2 = 4.32$, $p = .038$) were also significant. The model for acceptability ratings yielded more significant effects, and they were also more robust. For acceptability, while frequency was not a significant main effect, primary stress ($\chi^2 = 68.02$, $p < .001$) and suffix ($\chi^2 = 4.70$, $p = .03$) were, as long as their interaction ($\chi^2 = 4.41$, $p = .036$). The interaction of primary stress with word category was also significant ($\chi^2 = 6.55$, $p = .011$). Even though frequency was not a significant main effect, its interaction with other factors yielded significant results: word category x frequency ($\chi^2 = 11.69$, $p < .001$), primary stress x word category x frequency ($\chi^2 = 17.28$, $p < .001$), and suffix x word category x frequency ($\chi^2 = 10.45$, $p < .001$). The interaction primary stress x suffix x frequency was a trend ($\chi^2 = 3.76$, $p = .053$), as was the interaction between all four factors: primary stress x suffix x word category x frequency ($\chi^2 = 3.03$, $p = .08$).

Reaction times

Effect	*Df*	χ^2	*p-value*
Primary stress	1	0.87	.350
Suffix	1	0.33	.568
Word category	1	0.21	.654
Frequency	1	5.58	.018 *
Primary stress * Suffix	1	1.82	.178
Primary stress * Word category	1	0.13	.723
Suffix * Word category	1	2.09	.149
Primary stress * Frequency	1	0.23	.634
Suffix * Frequency	1	4.87	.027*
Word category * Frequency	1	1.27	.260
Primary stress * Suffix * Word category	1	0.69	.406
Primary stress * Suffix * Frequency	1	0.90	.344
Primary stress * Word category * Frequency	1	0.86	.355
Suffix * Word category * Frequency	1	4.32	.038 *
Primary stress * Suffix * Word category * Frequency	1	0.55	.459

Table 2: Results of likelihood ratio tests for the reaction times model.

Acceptability ratings

Effect	*Df*	χ^2	*p-value*
Primary stress	1	68.02	<.001 ***
Suffix	1	4.70	.03 *
Word category	1	0.14	.708
Frequency	1	1.70	.193

Primary stress * Suffix	1	4.41	.036 *
Primary stress * Word category	1	6.55	.011 *
Suffix * Word category	1	0.73	.393
Primary stress * Frequency	1	0.10	.756
Suffix * Frequency	1	0.12	.724
Word category * Frequency	1	11.69	<.001 ***
Primary stress * Suffix * Word category	1	2.04	.153
Primary stress * Suffix * Frequency	1	3.76	.053 +
Primary stress * Word category * Frequency	1	17.28	<.001 ***
Suffix * Word category * Frequency	1	10.45	.001 **
Primary stress * Suffix * Word category * Frequency	1	3.07	.08 +

Table 3: Results of likelihood ratio tests for the acceptability ratings model.

Figure 2-(a) shows RTs and acceptability ratings by primary stress and evaluative suffix. RTs show the highest slow down for proparoxytone (Sss) diminutives, such as *figadinho*. On the other hand, participants were the fastest when judging paroxytones diminutives (sSs). An interaction is visually suggested but not statistically significant ($\chi^2 = 1.82$, $p = .178$). Also, no pairwise comparisons were significant. This might have been the case because we allowed participants to take as long as they wished to respond. Such a choice was motivated by the observation that speakers often take a while to process and respond when asked what a word such as *figadinho* refers to. However, the lack of a trial timeout might have concealed effects that would otherwise appear.

Acceptability ratings, however, in Figure 2-(b), did show significant pairwise comparisons, as the significance of the models' main effects and interactions suggested. Primary stress was a significant main effect ($\chi^2 = 68.02$, $p < .001$), as were suffix ($\chi^2 = 4.70$, $p = .03$) and their interaction ($\chi^2 = 4.41$, $p = .036$). Paroxytone (sSs) diminutives were considerably higher rated than augmentatives ($t = 3.061$, $p = .0023$), which was expected given the greater use of the diminutive than the augmentative in general in BP. The interaction Suffix × Frequency was not significant for accuracy rates but was significant for RTs ($\chi^2 = 4.87$, $p < .027$), a measure for which frequency has been repeatedly proven to be relevant (Brysbaert et al., 2018; Forster & Chambers, 1973; Soares et al., 2015). Frequency and word category effects are more extensively discussed in the Appendix (A5-A9).

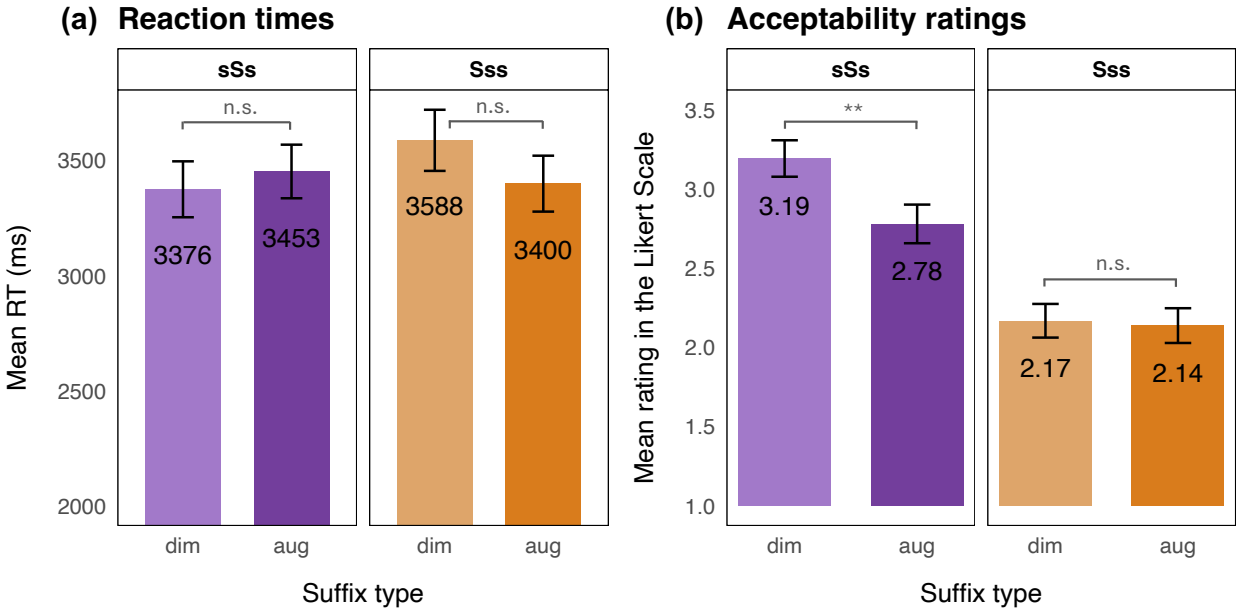


Figure 2: In (a) mean reaction times (RTs) and in (b) mean acceptability ratings, of diminutives and augmentatives of sSs (paroxytones) in purple, and Sss (proparoxytones) in orange.

Regarding the acceptability ratings proper, even though paroxytone diminutives are considered better than augmentatives, proparoxytone (Sss) diminutives lose this advantage and do not differ significantly from augmentatives (t = .049, p = .9613). In sum, diminutives of proparoxytones (Sss) are worse than diminutives of paroxytones (sSs), are harder to parse, and lose their edge over augmentatives.

We propose that the reason for such a pattern lies in the stress-attracting behavior of the diminutive: *-inho* attracts main stress to its first syllable, both by default penultimate stress and, perhaps even more importantly, because the palatal nasal has been argued to constitute a syllabically heavy coda (Wetzels, 1997). Under this configuration, the lexically stressed syllable of putative *figadinho* falls outside the three-syllable window, which we take to be the source of its defectivity.

This analysis is implemented via an Inviolable Constraint that requires, at the Lexical Level, rhizotonic (root) stress on a specific syllable σ_k for all words listed on a speaker's proparoxytones list L_{Pr}. This list is then formed by the set of BP proparoxytone words such as *fígado, tímido, número, pirámide, máscara* etc.[16]

[16] As mentioned in footnote 4, some highly frequent proparoxytone forms accept diminutives in *-inho/-inha*, such as *rapidinho* 'quick-DIM' and *musiquinha* 'music-DIM'. It is possible that such diminutive forms have been relexicalized without being on the PROP-RHIZ list, and hence are exempt from this evaluation.

(36) Implementation via Inviolable Constraint PROP-RHIZ: For words ∈ L_{Pr}, assign a violation if they do not have a grid mark higher than line 0 above σ_k at the Lexical Level.

The requirement of a line 1 (or higher) mark on the rhizotonically-stressed syllable can be achieved by the operation in (12-b), exemplified in (14). The underived words *fígado* 'liver' and *fósforo* 'matchstick', for instance, will receive such mark. However, in diminutivized forms such as *figadinho* and *fosforinho*, no gridmark is placed above *fi* and *fos* at the Lexical Level. The relevant contrast is illustrated by the derivations below.

(37) PROP-RHIZ evaluations for underived proparoxytones:
(fosfo(ro: End-Excluded, trochee constructed. Left-Headed Gridmark above *fos* satisfies PROP-RHIZ.

(38) PROP-RHIZ evaluations for diminutivized proparoxytones:
* (fos.fo.(ri.nho: Count-Two-Trochee at the Lexical level, then one Iter-Troch at the Post-Lexical level. Left-Headed Gridmark above *fos* falls outside the three-syllable window, so PROP-RHIZ is not satisfied.

Fósforo 'matchstick' is a revealing case, since it belongs to a set of syncopated forms that become paroxytones by virtue of medial vowel deletion. Thus, *fósforo* becomes *fós.fro* in casual speech, and may indeed be lexicalized as such. The same happens with *xícara* 'teacup', which becomes *xí.cra*.[17] If vowel deletion does not precede stress assignment, the derivation is simply as in (38); assuming, however, that it does, the derivation is as follows.

(39) PROP-RHIZ evaluations for syncopated proparoxytones:
(*fós.fro, (xí.cra*: trochee constructed. Left-Headed Gridmark above *fos* satisfies PROP-RHIZ.

[17] Though as noted by Araujo et al. (2008), this syncope is mostly limited to forms with a liquid in the final syllable.

PROP-RHIZ also underlies the contrast between defective diminutives in *-inho,* such as **timidinho,* and well-formed augmentatives in *-ão,* such as *timidão*. Since the augmentative is added at the Lexical Level, affixation takes place prior to stress assignment. The derivation therefore proceeds as in the case of oxytones (cf. (18) and (19)), such that the operations proposed in (12) for lexical stress guarantee a gridmark on Line 1 within the three-syllable window:

(40) *timidão* Step 1: End-Inclusion

x x (x
ti mi dão

(41) *timidão* Step 2: Count-Two-Trochee, Project-L

x x
(x x (x
ti mi dão

(42) *timidão* Step 3: Insert Right-Bracket end of Line 1, Project Rightmost-Head

x
x x)
(x x (x
ti mi dão

(43) Line 1 Gridmark above *ti* in (41) satisfies PROP-RHIZ.

This derivation also parallels that in (18)-(19) in that, still within the Lexical Block, a level of prominence is guaranteed on Line 1 above the lexically-marked syllable *ti* of the proparoxytone *tímido* 'shy'*,* even when the form receives final primary stress in *timidão*. This prominence may seem like a 'kind' of secondary stress, but it is crucially assigned in the Lexical Block rather than in the Post-Lexical Block, since it is created automatically as a consequence of the operations in (12).

The fatal problem with the diminutive is, then, that the operations proposed in (12) for lexical stress do not deliver a gridmark in Line 1 for the putative diminutive form *tímidinho,* so PROP-RHIZ cannot be satisfied within the three-syllable window:

(44) *timidiɲo* Step 1: Count-Two-Trochee

x	x	(	x	x
ti	mi		di	ɲo

(45) *timidiɲo* Step 2: Project, Line 1. But *tí* doesn't make it to line 1, because Count-Two-Trochee is not iterative at the Lexical Level

			x	
x	x	(	x	X
ti	mi		di	ɲo

(46) Lack of Line 1 Gridmark above *ti* in (45) fatally violates PROP-RHIZ.

Secondary stress could iteratively add to this structure and create another trochee, generating a footing such as (ti.mi(di.ɲo. However, secondary stress only occurs in the Post-Lexical Block, which is too late to satisfy (36). In the Lexical Block, where (36) must be evaluated, Count-Two-Trochee is not iterative.

In these cases, the diminutive form *-zinho*, which is added at the Post-Lexical Level, is used instead. Under the view that *-zinho* simply creates compound stress (Gilbert, 2021), leaving the base word intact, forms such as *timidozinho* and *figadozinho* already satisfy PROP-RHIZ within the first block, as is the case of the augmentative *timidão* in (40).[18] In other words, the base word in *timidozinho* and *figadozinho* is first constructed successfully in the Lexical Block, and then compounded Post-Lexically.[19]

Finally, we contend that PROP-RHIZ is also active in the allomorph selection between *-ez and -eza*. Because both suffixes are added in the Lexical Block, the successful derivation of oxytone *timidéz* is entirely parallel to that of *timidão* in (40)-(43), while the failed derivation of the alternative **timidéza* parallels that of **timidinho* in (44)-(46):

[18] An alternative possibility is that *-zinho* erases all stress before it and reassigns stress according to a second round of secondary stress, but this in fact also delivers *tìmidozínho* under the dactylic derivation. However, this would require that the erstwhile optional *timídozínho*, with the trochaic pattern, be a blocked output.

[19] In Lee (1992)'s Lexical Phonology and Morphology model for Brazilian Portuguese, plural formation is post-lexical, but it also requires reassignment to respect the three-syllable window, based on examples such as *lúcifer~lucíferes 'Lucifer-Lucifers'* or *júpiter ~ júpiteres* 'Jupiter-Jupiters'. However, native speakers we have consulted prefer maintenance on the proparoxytone syllable, with a variety of possible outputs, e.g., *lúciferes*, *lúcifeis, júpiters,* or *júpteres,* perhaps consistent in part with the notion that the final *-e-* is late/epenthetic. Such variable output forms deserve further study.

(47) *timidéz* Step 1: End-Inclusion

x x (x
ti mi dez

(48) *timidéz* Step 2: Count-Two-Trochee, Project-L

x x
(x x (x
ti mi dez

(49) *timidéz* Step 3: Insert Right-Bracket end of Line 1, Project Rightmost-Head

x
x x)
(x x (x
ti mi dez

(50) Line 1 Gridmark above *ti* in (48) satisfies PROP-RHIZ.

(51) *timidéza* Step 1: Count-Two-Trochee

x x (x x
ti mi de za

(52) *timidéza* Step 2: Project, Line 1. But *tí* doesn't make it to line 1, because Count-Two-Trochee is not iterative at the Lexical Level

x
x x (x x
ti mi de za

(53) Lack of Line 1 Gridmark above *ti* in (52) fatally violates PROP-RHIZ.

Thus, because *-eza* adds another syllable to the word, default paroxytone stress is triggered, and *ti* falls outside the three-syllable window by the end of main stress derivation in the Lexical Block. For **figadinho* and **timidinho*, we proposed that the palatal nasal /ɲ/ also contributes to stress attraction, together with default paroxytone stress.

This issue deserves further investigation, especially given the apparent divergence across Romance Languages. A very preliminary comparison between BP and Peninsular Spanish found no analogous constraints on *-ito/-(e)cito*. Along similar lines, Mascaró & Ohannesian (2026) argue that *-ez* is the more default and productive allomorph in Spanish, based on forms such as *verde~verdez* 'green~greenness' and

español~españolez ‘Spanish~Spanishness’. In BP, however, the corresponding forms would be *verdeza* and *espanholeza*, suggesting that *-eza* is more productive. These differences raise the possibility that constraints such as PROP-RHIZ and its interactions with the mechanisms responsible for primary and secondary stress construction differ between Spanish and BP.

One possible avenue for investigation is the higher frequency of oxytone forms in BP, which may enable derivations such as (18)-(19). This frequency difference is in part due to the incorporation of loans from languages such as Tupi-Guarani and Yoruba into the core vocabulary. BP is also independently known to show a greater tendency than Spanish toward oxytone forms in hypocoristics: names such as *Filomena* have the hypocoristic *Fílo* in Spanish, but *Filó* in BP. However, this contrast also interacts with the analyzability of the final vowel as a theme vowel. Final stress in Spanish may therefore depend on a different operation than End-Inclusion (16), or even on a different counting mechanism, perhaps involving moras rather than syllables. Such a difference could produce an overall reshuffling of the system, which, while in some respects is extensionally similar to BP, may differ in the specifics of its derivations.

6. Concluding remarks and future directions

Our explanation for the oddity of **tìmidinho* and **tìmideza,* versus well-formed *tìmidão* and *tìmidez,* follows from the interaction between PROP-RHIZ in (36) and lexical stress assignment, as modeled in (18)-(19). Specifically, the operation Count-Two-Trochee is not iteratively available in the Lexical Block and therefore cannot guarantee a Line 1 mark on the rhizotony-requiring initial syllable once affixation pushes that syllable outside the three-syllable window. By contrast, Post-Lexical forms *figadozinho* and *timidozinho* are well-formed because they involve independent stress calculation on the stem and suffix, yielding a compound-like stress pattern.

The central role of the Lexical/Post-Lexical distinction in our analysis raises the question of whether the same timing effects could be derived in a more syntactic model. We believe a parallel set of phonological predictions might potentially be yielded by a phase-based analysis that treats *-inho* and PROP-RHIZ as constraints on the Initial Spell-Out of items. What seems less plausible in the present case is an explanation based on the lexical semantics of idiosyncratic meanings, such as that of diminutives

like *camisinha* ‘condom’ (though literally ‘shirt-dim.’) and augmentatives like *orelhão* ‘phone booth’ (though literally ‘ear-aug’; cf. Armelin, 2014). The relevant generalization appears instead to be phonological, since it extends across the majority of proparoxytones, many of which are entirely transparent adjectives.

A deeper investigation about the relation between PROP-RHIZ and *-ez/-eza* allomorph selection likewise remains open. In this sense, it should also be noted that, while the proparoxytone bases of all forms discussed in this paper take *-ez* rather than *-eza,* there are also some non-proparoxytone forms that take *-ez,* as in surd(o)-*ez* ‘deaf-ness’, *polid(o)-ez* ‘polite-ness’, *maci(o)-ez* ‘soft-ness’, and *robust(o)-ez* ‘robust-ness’. A fuller analysis would ideally account for these forms without treating them as purely idiosyncratic.

More broadly, the comparison between on BP and Peninsular Spanish developed in the previous section raises questions about the generalizability of our analysis beyond BP. Apparently similar diminutive and nominalizing systems may differ both in the phonological restrictions they impose and in the productivity of the relevant allomorphs. Future work should investigate whether such differences reflect independent distinctions in PROP-RHIZ, in the construction of primary and secondary stress, or in the operations responsible for their interaction. This cross-linguistic comparison should be pursued not only for Romance languages such as Spanish, but also for languages as distant as Polish, which shows similar optionality in secondary stress and an even more predictable primary-stress pattern. We thus end by posing the broader question of whether systems that are extensionally similar to BP nevertheless differ in the derivational mechanisms that generate those patterns.

Palavras para Ana Paula Scher

Dedicamos este artigo a Ana Paula Scher, cuja contribuição aos estudos morfológicos do português brasileiro tem sido decisiva para a consolidação de uma perspectiva formal sobre a arquitetura da gramática no Brasil. Embora o percurso desenvolvido aqui passe sobretudo pela fonologia, o problema que nos guia (a distribuição de formas avaliativas, a competição entre sufixos e a preservação de propriedades da base em diferentes domínios derivacionais) pertence claramente ao espaço de interface que a obra de Ana Paula tanto ajudou a iluminar.

Dos estudos sobre nominalizações e construções com verbo leve às análises de formas truncadas, particípios inovadores e processos não concatenativos, seu trabalho mostra como fenômenos aparentemente pequenos da formação de palavras podem revelar propriedades profundas da gramática. É nesse espírito que oferecemos este estudo sobre *figadinho*: uma pequena homenagem a uma pesquisadora cuja curiosidade teórica, generosidade intelectual e papel formador seguem abrindo caminhos para novas perguntas sobre a morfologia do português brasileiro e suas interfaces.

Ana, que sua energia incansável continue nos trazendo muitas outras perguntas, muitas outras análises e muitos outros *insights*.

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Appendix

A1: Experimental conditions, with stimuli examples.

Primary stress	Suffix	Word Category	Frequency	Non-derived Word	Derived Word
Paroxytone (sSs)	Diminutive (-inho/a)	Noun	High	controle (control)	controlinho
			Low	caderno (notebook)	caderninho
		Adjective	High	bonito (beautiful)	bonitinho
			Low	honesto (honest)	honestinho
	Augmentative (-ão/-ona)	Noun	High	janela (window)	janelão
			Low	balanço (balance)	balanção
		Adjective	High	sincero (sincere)	sincerão
			Low	zangado (angry)	zangadão
Proparoxytone (Sss)	Diminutive (-inho/a)	Noun	High	médico (doctor)	mediquinho
			Low	lâmpada (bulb)	lampadinha
		Adjective	High	líquido (liquid)	liquidinho
			Low	íntimo (intimate)	intiminho
	Augmentative (-ão/-ona)	Noun	High	número (number)	numerão
			Low	pêssego (peach)	pessegão
		Adjective	High	trágico (tragic)	tragicão
			Low	prático (practical)	praticão

A2: Target stimuli for experimental version 1.

Target Stimuli - Experimental version 1							
Primary stress	**Word Category**	**Suffix type**	**Frequency**	**Frequency value**	**Non-derived word**	**Derived word**	**N**
Paroxytone (sSs)	Noun	Diminutive	high	7515	idade	idadinha	1
Paroxytone (sSs)	Noun	Diminutive	high	7776	controle	controlinho	2
Paroxytone (sSs)	Noun	Diminutive	low	465	caderno	caderninho	3
Paroxytone (sSs)	Noun	Diminutive	low	327	pipoca	pipoquinha	4
Paroxytone (sSs)	Noun	Augmentative	high	9708	desculpa	desculpão	5
Paroxytone (sSs)	Noun	Augmentative	high	5142	janela	janelão	6
Paroxytone (sSs)	Noun	Augmentative	low	481	balanço	balanção	7
Paroxytone (sSs)	Noun	Augmentative	low	164	cantada	cantadão	8
Paroxytone (sSs)	Adjective	Diminutive	high	12088	pequeno	pequeninho	9
Paroxytone (sSs)	Adjective	Diminutive	high	10097	bonito	bonitinho	10
Paroxytone (sSs)	Adjective	Diminutive	low	2169	honesto	honestinho	11
Paroxytone (sSs)	Adjective	Diminutive	low	316	corrupto	corruptinho	12
Paroxytone (sSs)	Adjective	Augmentative	high	16026	querido	queridão	13
Paroxytone (sSs)	Adjective	Augmentative	high	4335	seguinte	seguintão	14
Paroxytone (sSs)	Adjective	Augmentative	low	1082	sincero	sincerão	15
Paroxytone (sSs)	Adjective	Augmentative	low	1253	zangado	zangadão	16
Proparoxytone (Sss)	Noun	Diminutive	high	9450	médico	mediquinho	17
Proparoxytone (Sss)	Noun	Diminutive	high	5342	época	epoquinha	18
Proparoxytone (Sss)	Noun	Diminutive	low	456	lâmpada	lampadinha	19
Proparoxytone (Sss)	Noun	Diminutive	low	111	término	termininho	20
Proparoxytone (Sss)	Noun	Augmentative	high	12784	número	numerão	21
Proparoxytone (Sss)	Noun	Augmentative	high	4253	máquina	maquinão	22
Proparoxytone (Sss)	Noun	Augmentative	low	308	pêssego	pessegão	23
Proparoxytone (Sss)	Noun	Augmentative	low	251	ídolo	idolão	24
Proparoxytone (Sss)	Adjective	Diminutive	high	10690	único	uniquinho	25
Proparoxytone (Sss)	Adjective	Diminutive	high	510	líquido	liquidinho	26
Proparoxytone (Sss)	Adjective	Diminutive	low	441	íntimo	intiminho	27
Proparoxytone (Sss)	Adjective	Diminutive	low	183	cínico	ciniquinho	28
Proparoxytone (Sss)	Adjective	Augmentative	high	8759	último	ultimão	29
Proparoxytone (Sss)	Adjective	Augmentative	high	486	trágico	tragicão	30
Proparoxytone (Sss)	Adjective	Augmentative	low	389	prático	praticão	31
Proparoxytone (Sss)	Adjective	Augmentative	low	104	íngreme	ingremão	32

A3: Target stimuli for experimental version 2.

Target Stimuli - Experimental version 2							
Primary stress	**Word Category**	**Suffix type**	**Frequency**	**Frequency value**	**Non-derived word**	**Derived word**	**N**
Paroxytone (sSs)	Noun	Augmentative	high	7515	idade	idadão	1
Paroxytone (sSs)	Noun	Augmentative	high	7776	controle	controlão	2
Paroxytone (sSs)	Noun	Augmentative	low	465	caderno	cadernão	3
Paroxytone (sSs)	Noun	Augmentative	low	327	pipoca	pipocão	4
Paroxytone (sSs)	Noun	Diminutive	high	9708	desculpa	desculpinha	5
Paroxytone (sSs)	Noun	Diminutive	high	5142	janela	janelinha	6
Paroxytone (sSs)	Noun	Diminutive	low	481	balanço	balancinho	7
Paroxytone (sSs)	Noun	Diminutive	low	164	cantada	cantadinha	8
Paroxytone (sSs)	Adjective	Augmentative	high	12088	pequeno	pequenão	9
Paroxytone (sSs)	Adjective	Augmentative	high	10097	bonito	bonitão	10
Paroxytone (sSs)	Adjective	Augmentative	low	2169	honesto	honestão	11
Paroxytone (sSs)	Adjective	Augmentative	low	316	corrupto	corruptão	12
Paroxytone (sSs)	Adjective	Diminutive	high	16026	querido	queridinho	13
Paroxytone (sSs)	Adjective	Diminutive	high	4335	seguinte	seguintinho	14
Paroxytone (sSs)	Adjective	Diminutive	low	1082	sincero	sincerinho	15
Paroxytone (sSs)	Adjective	Diminutive	low	1253	zangado	zangadinho	16
Proparoxytone (Sss)	Noun	Augmentative	high	9450	médico	medicão	17
Proparoxytone (Sss)	Noun	Augmentative	high	5342	época	epocão	18
Proparoxytone (Sss)	Noun	Augmentative	low	456	lâmpada	lampadão	19
Proparoxytone (Sss)	Noun	Augmentative	low	111	término	terminão	20
Proparoxytone (Sss)	Noun	Diminutive	high	12784	número	numerinho	21
Proparoxytone (Sss)	Noun	Diminutive	high	4253	máquina	maquininha	22
Proparoxytone (Sss)	Noun	Diminutive	low	308	pêssego	pesseguinho	23
Proparoxytone (Sss)	Noun	Diminutive	low	251	ídolo	idolinho	24
Proparoxytone (Sss)	Adjective	Augmentative	high	10690	único	unicão	25
Proparoxytone (Sss)	Adjective	Augmentative	high	510	líquido	liquidão	26
Proparoxytone (Sss)	Adjective	Augmentative	low	441	íntimo	intimão	27
Proparoxytone (Sss)	Adjective	Augmentative	low	183	cínico	*cinicão*	28
Proparoxytone (Sss)	Adjective	Diminutive	high	8759	último	ultiminho	29
Proparoxytone (Sss)	Adjective	Diminutive	high	486	trágico	tragiquinho	30
Proparoxytone (Sss)	Adjective	Diminutive	low	389	prático	pratiquinho	31
Proparoxytone (Sss)	Adjective	Diminutive	low	104	íngreme	ingreminho	32

A4: Distractors (identical in both experimental versions).

Distractors (same for both experimental versions)							
Primary stress	**Word Category**	**Type**	**Frequency**	**Frequency value**	**Non-derived word**	**Derived word**	**N**
Oxytone (ssS)	Verb›Noun	Nominalization	high	55092	falar	falação	33
Oxytone (ssS)	Verb›Noun	Nominalization	high	3488	destruir	destruição	34
Oxytone (ssS)	Verb›Noun	Nominalization	low	12	convir	convição	35
Oxytone (ssS)	Verb›Noun	Nominalization	low	11	consistir	consistição	36
Oxytone (ssS)	Verb›Noun	Nominalization	high	14687	contar	contagem	37
Oxytone (ssS)	Verb›Noun	Nominalization	high	5617	aprender	aprendizagem	38
Oxytone (ssS)	Verb›Noun	Nominalization	low	403	armar	armagem	39
Oxytone (ssS)	Verb›Noun	Nominalization	low	294	punir	punigem	40
Oxytone (ssS)	Verb›Noun	Nominalization	high	11843	pagar	pagamento	41
Oxytone (ssS)	Verb›Noun	Nominalization	high	9773	casar	casamento	42
Oxytone (ssS)	Verb›Noun	Nominalization	low	535	localizar	localizamento	43
Oxytone (ssS)	Verb›Noun	Nominalization	low	75	elaborar	elaboramento	44
Oxytone (ssS)	Verb›Noun	Nominalization	high	3200	fechar	fechadura	45
Oxytone (ssS)	Verb›Noun	Nominalization	high	1958	assinar	assinatura	46
Oxytone (ssS)	Verb›Noun	Nominalization	low	20	medicar	medicadura	47
Oxytone (ssS)	Verb›Noun	Nominalization	low	12	teclar	tecladura	48
Oxytone (ssS)	Verb	Irregular V	high	40396	saber	eu sabo	49
Oxytone (ssS)	Verb	Irregular V	high	171	caber	eu cabo	50
Oxytone (ssS)	Verb	Defectives	low	2213	explodir	eu explodo	51
Oxytone (ssS)	Verb	Defectives	low	866	doer	eu doo	52
Oxytone (ssS)	Verb	Defectives	high	819	falhar	eu falho	53
Oxytone (ssS)	Verb	Defectives	high	69	banir	eu bano	54
Oxytone (ssS)	Verb	Defectives	low	54	ruir	eu ruo	55
Oxytone (ssS)	Verb	Defectives	low	40	colorir	eu coloro	56
Tonic	Adjective	Derived	high	161052	só	sozinho	57
Oxytone (ssS)	Noun	Derived	high	12401	café	cafezal	58
Paroxytone (sSs)	Adjective	Derived	low	12373	fácil	facilidade	59
Tonic	Noun	Derived	low	5165	chá	chaleira	60
Paroxytone (sSs)	Noun	Derived	high	1631	açúcar	açucarado	61
Oxytone (ssS)	Noun	Derived	high	518	balé	bailarina	62
Proparoxytone (Sss)	Adjective	Derived	low	345	pálido	palidez	63
Proparoxytone (Sss)	Adjective	Derived	low	30	úmido	umidade	64

A5: Discussion of frequency and word category experimental results

This section's goal is to briefly present and discuss experimental results that were tangential to the central topic of this article, but still relevant. The pairwise comparisons presented below (Tables A6 and A7) were explorations of the RTs and acceptability models' significant main effects and interactions. All values were corrected for multiple comparisons using the Holm method. Values not reported were not significant.

Worthy of a brief discussion was the interaction between word category and frequency. In lower frequencies, nouns were better rated than adjectives (t = 2.655, p = .0163), but the pattern reversed in higher frequencies, where nouns were worse rated than adjectives (t = -2.131, p = .0336). The pattern was still present for paroxytones (sSs) when primary stress was added as a factor: paroxytone nouns (sSs nouns) with high frequency were lower rated than those with low frequency (t = -4.794, p < .0000). In adjectives, the pattern was the opposite: high frequency paroxytone adjectives (sSs adjectives) were higher rated than low frequency ones (t = 2.977, p = .0091). When evaluative suffix was added as a factor, the pattern was still present for diminutives, but not for augmentatives: High frequency diminutives were lower rated as nouns than as adjectives (t = -2.629, p = .0264), while low frequency diminutives were higher rated as nouns than as adjectives (t = 3.946, p = .0004). Two other observations conform to the pattern: (i) low frequency nouns were higher rated as diminutives than as augmentatives (t = 3.293, p = .0042), and (ii) none of these effects was present for proparoxytones. This ratifies our observation that in proparoxytones diminutives lose their edge over augmentatives. Notably, that is the case even though Rodrigues (2025) notes that proparoxytones (Sss) in *-inh-*, the ones used in this study's experiment, are more frequent than those in *-zinh-*. The fact that frequency was not a significant main effect in our acceptability model might be the reason for this apparent contradiction.

Given the overall higher objective frequency of nouns as a category (Estivalet, Meunier, 2015), the noun-adjective asymmetry mentioned above might seem surprising, but it may also reflect a particularly high entrenchment of high-frequency adjectives in BP. In addition, the fact that nouns are more frequent as a class overall doesn't straightforwardly predict that a specific noun and specific adjective with the *same* objective frequency will be rated differently in an acceptability task. The interaction we observed, with nouns rated higher at low frequencies but lower at high

frequencies, suggests that word class and frequency do not combine additively in shaping acceptability judgments, a question that remains open in the absence of BP-specific familiarity norms by word category[20].

A6: Pairwise comparisons for RTs.

- *Frequency within suffix:* When the suffix is an augmentative, participants react faster to higher frequencies than to lower ones (t = -3.202, p = .0029).
- *Suffix within word category and frequency*: When the word category is a low frequency noun, participants react faster to diminutives than augmentatives (t = -2.568, p = .0420).
- *Word category within suffix and frequency*: When the suffix is a low frequency diminutive, participants react faster to nouns than to adjectives (t = -2.550, p = .0442).
- *Frequency within suffix and word category*: When the suffix is an augmentative noun, participants react faster to higher than lower frequency (t = -2.808, p = .0207)

A7: Pairwise comparisons for acceptability ratings.

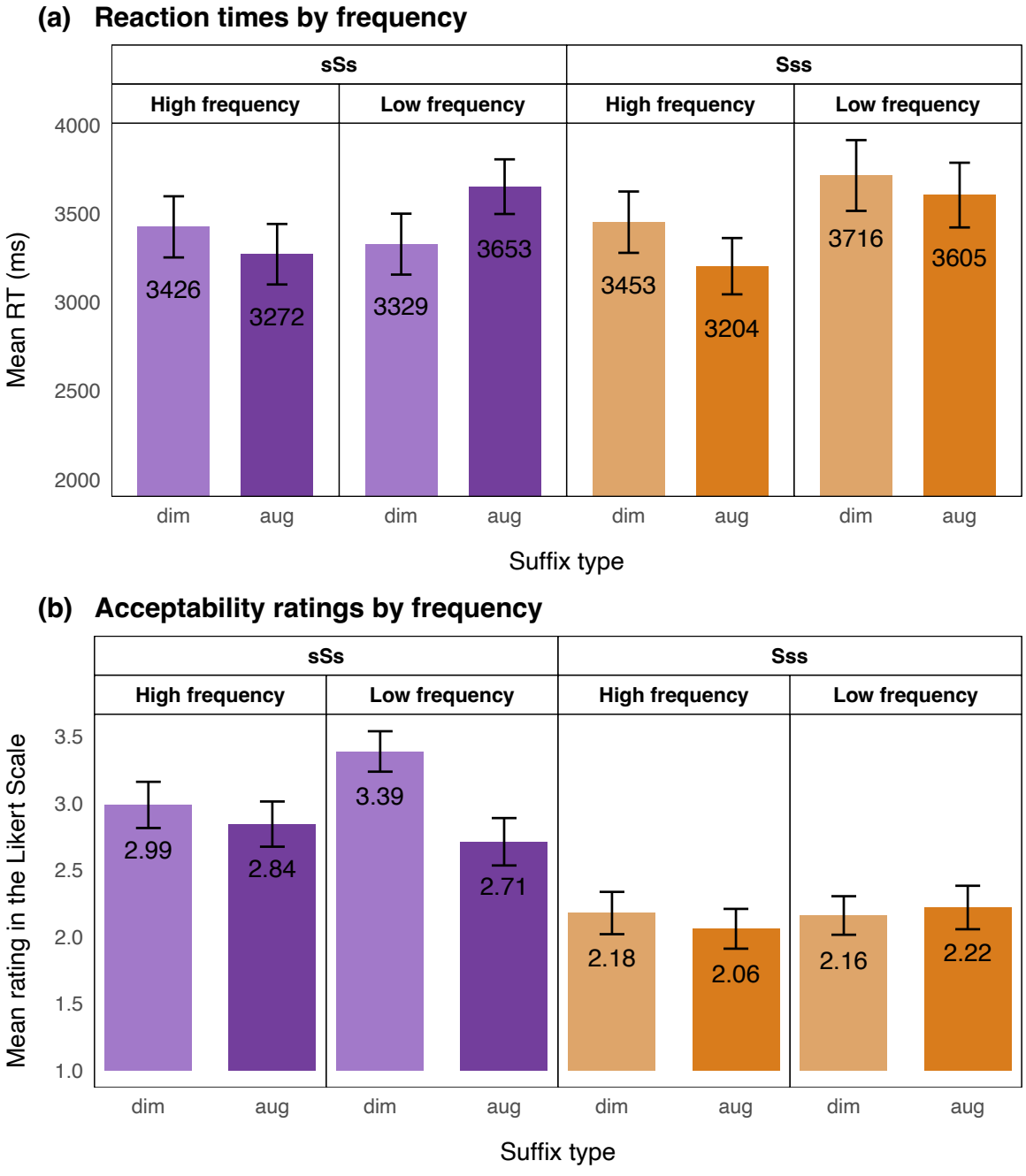
- *Word category within suffix:* Paroxytones (sSs) are higher rated than proparoxytones (Sss) both when they are nouns (t = 4.219, p < .0001) and adjectives (t = 7.621, p < .0001).
- *Word category within frequency*: Nouns are lower rated than adjectives in higher frequencies (t = -2.131, p = .0336), but the pattern reverses in lower frequencies (t = 2.655, p = .0163).
- *Frequency within word category:* Nouns are lower rated in high frequencies than in lower ones (t = -3.360, p = .0017), while adjectives' ratings don't change as a function of frequency (t = 1.465, p = .1435).
- *Primary stress within suffix and frequency:* High frequency diminutives and augmentatives are higher rated as paroxytones (sSs) than as proparoxytones (Sss) (dim: t = 4.051, p = .0002; aug: t = 4.059, p = .0002). In low frequencies, diminutive paroxytones (sSs) are better rated than diminutive proparoxytones (Sss; t = 6.433, p < .0001), but rates for low frequency augmentatives do not significantly change between paroxytones (sSs) and proparoxytones (Sss; t = 2.343, p = .0195).
- *Suffix within primary stress and frequency:* Diminutives of low frequency paroxytones (sSs) are higher rated than augmentatives (t = 3.314, p = .0039).
- *Primary stress within word category and frequency:* High frequency adjectives are higher rated when they are paroxytones (sSs) than proparoxytones (Sss: t = 7.206, p < .0000), but this difference is not significant for nouns (t = .044, p = .4573). In low frequency, both nouns and

[20] Although normative studies of emotional words in BP have collected familiarity ratings as one of their dimensions (Oliveira et al., 2013: Lima & Buratto, 2021; Silva, 2022), these studies were designed around affective word categories rather than general vocabulary, and none provides familiarity norms broken down by word category. Broad subjective familiarity norms for BP comparable to those available for European Portuguese (Garcia-Marques, 2003) remain unavailable.

adjectives are higher rated as paroxytones (sSs) than as proparoxytones (Sss; Adjectives: $t = 3.538$, $p = .0009$; Nouns: $t = 5.205$, $p < .0000$).

- *Word category within primary stress and frequency:* High frequency paroxytones (sSs) are lower rated as nouns than as adjectives ($t = -4.976$, $p < .0000$). The difference in ratings for nouns and verbs of high frequency proparoxytones (Sss) and low frequency paroxytones (sSs) and proparoxytones (Sss) is not significant.
- *Frequency within primary stress and word category:* Paroxytone nouns (sSs) with high frequency are lower rated than those with low frequency ($t = -4.794$, $p < .0000$). In adjectives, the pattern is the opposite: high frequency paroxytone (sSs) adjectives are higher rated than low frequency ones ($t = 2.977$, $p = .0091$).
- *Syffix within word category and frequency:* Low frequency nouns are higher rated as diminutives than as augmentatives ($t = 3.293$, $p = .0042$)
- *Word category within suffix and frequency:* High frequency diminutives are lower rated as nouns than as adjectives ($t = -2.629$, $p = .0264$), while low frequency diminutives are higher rated as nouns than as adjectives ($t = 3.946$, $p = .0004$).
- *Frequency within suffix and word category:* Noun diminutives in higher frequencies are rated lower than those in lower frequency ($t = -4.129$, $p = .0002$), whereas adjective diminutives in high frequency are rated higher than those in lower frequency ($t = 2.449$, $p = .0440$).

A8: In (a) mean reaction times (RTs) and in (b) mean acceptability ratings, of diminutives and augmentatives of sSs (paroxytones) in purple, and Sss (proparoxytones) in orange, by high (right) and low (left) frequency.



A9: In (a) mean reaction times (RTs) and in (b) mean acceptability ratings, of diminutives and augmentatives of sSs (paroxytones) in purple, and Sss (proparoxytones) in orange, by high (right) and low (left) frequency, and by nouns (top) and adjectives (bottom).

