1. Introduction

Data like those in (1) to (3) have given rise to a fruitful debate in morphophonological frameworks for the study of natural languages (Ito, 1990; Mester, 1990, Weeda, 1992):

1) a. *commy-*commo b. communist Australian English (AE)
2) a. Repro b. reproduction (*Reproduktion*) German (G)
3) a. secreta b. secretária (*secretary*) Brazilian Portuguese (BP)

Defining the nature of the word-formation processes that generate these nominal forms has enriched the debate, and their supposedly unpredictable structural properties have led to the suggestion that they do not involve concatenative affixation and to the development of phonological analyses for the phenomenon.

Some of the interesting points which called researchers’ attention can be summarized by the two questions below:

a) What is the nature of the word-formation process that generates truncated forms (TFs)?
b) What is their structural representation?

Apart from these questions, others related to word structure (e.g. Can TFs’ be attributed a predictable structural analysis?) and anchoring (e.g. Which part of the base survives in the truncated form?) dominated the debate and gave rise to proposals based on a globalist framework for linguistic analysis. In that line, McCarthy & Prince (1986; 1988) claimed that the process of morphological truncation maps the base melody segments to a prosodically defined template. A similar analysis comes from Benua (1995). The author suggests that morphologically truncated words show irregular phonology in order to preserve identity with their source word bases. Finally, Gonçalves (2011), dealing specifically with Brazilian Portuguese (BP) data, observes that TFs in that language preserve the onset of the first syllabic foot (from right to left) of their corresponding full forms. For that author, the process that generates TFs occurs in the domain of prosody.

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This paper focuses on two types of TFs in BP, mainly on their structure and their colloquial and evaluative interpretation. Originally, the idea of this paper was to deal with all types of TFs found in BP trying to offer a uniform analysis for all of them. However, the observation of the facts has suggested that this uniformity in the analysis may not be possible due to the different characteristics exhibited by the different TFs. The two types of TFs selected to be discussed in this paper share some structural properties and a special evaluative interpretation, which we claim to be the result of the presence of an evaluative morpheme, namely, [EVAL] in their morphosyntactic structure.

The organization of the paper is as follows: in section 2, some examples of truncated nominal forms in BP will be presented and grouped into four different types, from which two will be investigated in this paper. Section 3 presents the essentials of the Distributed Morphology (DM) approach to grammar which supports the analysis to be suggested here. The analysis for TFs itself will be presented in section 4, contemplating the two special types of TFs in BP under investigation in this paper, and will account for their special evaluative interpretation in terms of an evaluative head in syntax. Section 5 ends the paper with some final remarks.

2. Truncated words in Brazilian Portuguese

TFs have recently been given more specific attention in the literature on word formation in BP and can roughly be described as in (4):

4) Truncated Nominal Form (TF)

\[
\text{corresponds to a primitive or derived (suffixed) word compound or derived (prefixed) word} \\
\text{Corresponds to a primitive or derived (suffixed) word}
\]

last segment of the root is a consonant (type III, IV)

\begin{align*}
\text{of the root is a vowel} & (\text{type II}) \\
\text{segment insertion} & \text{segment insertion}
\end{align*}

vowel -a (type III) -as, -(l)s (type IV)

Each type of TF is detailed and exemplified below:

**Type I**: TFs of type I correspond to compound or derived words and are formed by the initial morpheme in these words – a base or a prefix:

5) a. \text{psico}^2 \quad (\text{psicologia}) \quad \text{psychology} \\
b. \text{odont} \quad (\text{odontologia}) \quad \text{dentistry} \\
c. \text{fono} \quad (\text{fonoaudiologia}) \quad \text{speech therapy} \\
d. \text{super} \quad (\text{supermerca}do) \quad \text{supermarket}

**Type II**: TFs of type II correspond to primitive or derived words from which the whole root or part of it is preserved. It can be observed that the last segment of the TF is a vowel belonging to the root of its corresponding full form:

6) a. \text{deprê} \quad (\text{depressão/deprimido}) \quad \text{depression/depressed} \\
b. \text{pregui} \quad (\text{preguiça/preguiçoso}) \quad \text{laziness/lazy}

\(^2\) The stressed syllable is in bold.
c. preju (prejuízo)  
  d. biju (bijuteria)  

**Type III:** TFs of type III correspond to primitive or derived words from which the whole root or part of it is preserved. They differ from TFs of type II in that the last segment of the root is a consonant and the TF is formed by the insertion of a segment: the vowel –a is added. Type III is the most common type of TF in BP:

7) a. *furta* (fortuna)  
  b. *neura* (neurose)  
  c. *secreta* (secretária)  
  d. *delega* (delegado)  
  e. *gurja* (gorgeta)

These three more basic types of TFs in BP have already been described and discussed in the literature. They have received different analysis in terms of prosodic morphology and OT (Belchior, 2005, 2006, 2009, Gonçalves, 2006, 2009, 2011, Gonçalves & Vasquez, 2004), as well as in terms of Distributed Morphology (Scher, 2011, 2012a, 2012b).

Scher (*op. cit.*) observed the emergence of truncated nominal forms ending in a sequence such as –as or –is, as described below:

**Type IV:** TFs of type IV correspond to primitive or derived words from which the whole root or part of it is preserved. Like TFs of type III, they differ from TFs of type II in that the last segment of the root is a consonant. When compared to TFs of type III, however, the difference between the two types rests in the segment inserted after the root to form the TF: those of type IV are formed by the insertion of one of the two sequences of segments, –as or –(i)s.

8) a. *bermas* (bermuda)  
  b. *saudas* (saudades)  
  c. *bob(i)s* (bobeira)  
  d. *brinc(i)s* (brincadeira)  
  e. *vont(i)s* (vontade)

As mentioned above, this paper focuses, specifically, on two types of TFs in BP, namely, types III and IV. The reason for this selection comes form the similarities between the two types. It was observed that they are both rhizotonic. In addition, neither of them exhibits any morphemes, except for the root and the thematic suffix. Finally, they differ from those in types I and II in that they add extra material to the truncated form, namely, the vowel -a or the sequences –as or –(i)s.

Two other properties are worth mentioning and have to be emphasized, since they raise important questions about TFs. The first one relates to TFs in BP, in general. Most often, these truncated words are attributed an appreciative reading by the speakers of BP. This special reading has already been observed and described in the literature (Gonçalves, 2005; Villalva, 2008), but it still lacks a formal explanation. Therefore, the question that remains unanswered is the following: how does this special interpretation obtain? Can it be related to the structure of these forms? The second property relates to TFs of types III and IV, specifically and has to do with the difference between TFs and their corresponding full forms. It has been observed that the former (TFs) lack some phonological segments which appear in

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3 The letter “c” is pronounced as /k/, as in *brincadeira* (game, joke), *brinquedo* (toy), etc.
the latter (full forms) as exponents for word categorizing abstract morphemes. For example, the forms -ist- and -a appear in the word *baterista* as the phonological realization of the syntactic N morpheme and the thematic nominal suffix, respectively. The word *batera*, on the other hand, does not exhibit the phonological material for the realization of the abstract syntactic N morpheme, but it seems to realize the nominal thematic suffix, with the theme vowel -a.

When it comes to nominal thematic suffixes in BP and their corresponding theme vowels, it is worth mentioning Alcântara (2010), who, following the work of Harris (1999), presents a DM based description and analysis for groups of non derived BP non-verbal words ended in the non stressed vowels /o, a, e/ or in phonological “zero”. In her paper, the author suggests that a post-syntactic operation of the type “add morpheme”, motivated by an idiosyncratic requirement similar to a condition on word formation rules, adds to the word structure a terminal node for the nominal thematic suffix, which confers the structure the status of an independent word. This morphological terminal node will be phonologically realized by the non stressed vowels /o, a, e/. The structural representations she suggests for the syntactic and morphological derivations of nominal forms in BP can be seen in (9):

9) a) Syntax
   \[ X \]
   b) morphology
   \[ \begin{array}{c}
   X \\
   \hline
   3
   \end{array} \]

Having said that, the observation of the data from (10) to (12) suggests that some morphological properties of BP TFs can, in fact, be predicted. When compared to their corresponding full forms, TFs of types III and IV can be said to be missing the phonological realization for one or more derivational suffixes and, also, for the non-verbal form class morphemes or nominal thematic suffix, when applicable:

11) a. *bater-a*  b. *bater-ist-a* (drummer)
12) a. *forast-a*  b. *forast-eir-o* (outsider)

Similar behavior can be observed in the examples from (13) to (16). The difference between these examples and those from (10) to (12) relates to the number and type of suggested abstract morphemes without phonological realization in the TFs:

16) a. *brinc-(i)s*  b. *brinc-a-(d)eir-a* (joke)

Based on the data from (10) to (16), we formulate the following generalization for the TFs of types III and IV in BP:

**Generalization:** TFs grouped in types III and IV in BP, when compared to their corresponding full forms, miss phonological material that has morphological status, standing for abstract morphemes in the full forms.
Previous analyses for the phenomenon, in terms of phonological theory, do not always offer an account for either the generalization above or the appreciative reading observed for TFs. Concerning the generalization, the foot analysis offered by Gonçalves (2011), for example, suggests that TFs are formed from their corresponding full forms, through a phonological process that drops part of the last foot of the word, keeping its onset. Such an analysis clearly does not account for data such as adrena, the TF corresponding to adrenalina (adrenalin), since it predicts that the sequence of segments -ina should be dropped from the foot -lina. The base for the formation of the TF would then be adrenal, deriving adrenala, contrary to facts. Most importantly, the previous analyses do not consider the fact that, most often, the sequence of phonological segments, missing in TFs, has morphological status. As for the appreciative reading attributed to TFs, most researches mention it but do not provide a formal account for it.

Further investigation suggested that TFs in examples from (17) to (19) might, in principle, contradict the generalization formulated above, since the sequences of phonological segments that they are missing cannot be said to be canonical affixes in their corresponding full words.

17) a. cerv-a b. cerv- seja (beer) c. √cervela
18) a. pij-a b. pij- ama (pajamas) c. √pijama
19) a. burocr-a b. burocr- ata (bureaucrat) c. √buro√crata

The forms –ej-, in cerveja, –am- in pijama or –at- in burocrata are not supposed to be considered separate morphemic units in these words. (17c), (18c) and (19c) are tentative representations for the words cerveja, pijama and burocrata, which go back to their Gallic or French origins. These representations, however, may not be available for present day speakers, who, according to the tentative analysis I’ll present here, might be treating –ej-, -am- and –at- as derivational suffixes. Therefore, they find it easy to segment the words cerveja, pijama and burocrata as in (20), treating cerv-, pij- and burocr- as their roots.

20) a. √cerv-ej-a b. √pij- am-a c. √burocr- at-a

Thus, in spite of not being canonical morphemes in the words mentioned above, the forms –ej-, –am- and –at-, among many others, are being treated as such by the speaker. Evidence for this claim comes from two facts. First of all, the forms –ej-, -am- and –at- occur as suffixes in other contexts. Thus, the form –ej- is a real diminutive suffix and occurs as a real suffix in examples such as those from (21) to (24):

21) broto-ej-a (rash)
22) sertan-ej-a/o (a woman/man from “sertão” - backlands)
23) pardal-ej-a/o (small sparrow)
24) grac-ej-o (joke)

Likewise, the form –am- is a collective suffix and occurs as a real derivational suffix in examples such as those from (25) to (28):

25) dinheir-am-a (lots of money)
26) poeir-am-a (lots of dust)
27) cabel-am-a (lots of hair)
28) burac-am-a (lots of holes)

Finally, the form –at- is a real nominalizing suffix, as can be seen in examples such as those from (29) to (32):
To argue in favor of the morphological status of -ej-, -am- and -at- in the contexts shown in (20), it is worth observing that in those contexts these sequences of segments attract the stress of words in which they appear. According to Camara Jr (1970), a derived word in Portuguese will never have a stressed root: roots in derived words systematically transfer their underlying stress to the last suffix in the word. This can be seen in all examples from (21) to (32), in which, the relevant attested suffixes are stressed. As mentioned above, all full forms in (20) place their stress within the last sequence of segments and, therefore, the speaker will see this as a sign to treat them as derived words, in which -ej-, -am- and -at- are analysed as suffixes. TFs may, then, be formed without some parts of these derived words, as long as they are morphemic units.

The same reasoning can be made for examples such as those from (33) to (37):

33) a. fort-un-a (=fortune) b. furta
34) a. vagab-und-a (=slut) b. vagab-a
35) a. vestib-ul-ar (=entrance examination at university) b. vestib-a
36) a. gorg-et-a (=tip) b. gurj-a
37) a. analf-ab-et-o (=illiterate) b. analf-a

When accepting and producing furta, vagaba, vestiba, gurja or analfa as the truncated forms for fortuna, vagabunda, gorgeta and analfabeto, respectively, the speaker seems to be reanalyzing the mono-morphemic words fortuna, vagabunda, gorgeta e analfabeto as the bi-morphemic or even multimorphemic forms fort-un-a, vagab-und-a, vestib-ul-ar, gorg-et-a and analf-ab-et-o. Thus, in spite of not being a morpheme in the words above, the forms realized as –un-, –und-, –ul-, –ar, –et-, –ab- and –et-, among many others in different contexts, are being treated as such by the speaker.

Evidence for this comes from the phonological properties of these sequences of segments, which behave as real suffixes of the language, since they attract the stress of the derived words in which they appear. As a matter of fact, all full forms in (20) and those from (33) to (37) place their stress within the last sequence of segments and will, therefore, be treated as derived words, from which some morphemic units might be absent in the derivation of a truncated corresponding form.

3. Distributed Morphology

Halle & Marantz (1993) developed the Distributed Morphology approach to grammar, a model of linguistics analysis in which the grammar has no lexical generative component. According to this model, both words and sentences are formed under the rules of the syntactic component. One of the consequences of this proposal is that the analyses based on the lexicon in previous models have now to be discussed in terms of formal, semantic and phonological properties which are distributed all over the distinct components of the grammar. The architecture of the grammar includes a Morphological Structure (MS) which serves as the syntax-phonology interface.
There are three central properties defining this model:

a) **Late insertion** – syntactic categories are purely abstract, with no phonological content. The phonological expression of syntactic terminal nodes is inserted only in the mapping to PF;

b) **Underspecification of Vocabulary Items (VIs)** – the phonological expressions do not need to be completely specified for the syntactic positions where they will be inserted in. Default VIs can be inserted when an more specified item is not available;

c) **Hierarchical syntactic structure all the way down** – elements in syntax and morphology undergo the same types of syntactic operations.

Apart from that, some post-syntactic morphological operations are proposed to solve the mismatches between the organization of the terminal nodes at the syntactic level, on one hand, and at MS and PF, on the other. These morphological operations apply to the syntactic structures, before they are filled with phonological expressions. Terminal nodes may be added to the structure, they may be moved from one point to another, merged, fissioned or fused. They may even have some of the features they bring from the syntax deleted in certain contexts.

The analysis for the TFs to be developed in this paper will explicit and explore some of these operations. In particular, the addition of terminal nodes in the morphological component will play an important role in the proposal.

4. **An analysis for TFs of types III and IV**

This paper argues in favor of a more morphological account for the so-called TFs of types III and IV, which involves rescuing a concatenative analysis to the word formation process that derives these types of TFs.

Under this approach, TFs of types III and IV can be treated as derivations from the root, rather than the result of any kind of process of segment deletion applied to their corresponding full forms. They are independently derived by a syntactic process which involves root categorization and the concatenation of an evaluative head to the structure, followed by a morphological operation which inserts a thematic suffix in the derivation, because of an idiosyncratic condition on word formation in BP (as argued by Alcântara, 2010). Subsequently, rules of vocabulary insertion apply and vocabulary items (VIs) are placed on the root and other terminal node positions, such as category morphemes and thematic suffixes, the former, inserted in the syntactic derivation, and the latter, inserted in the morphological component.

The representations below illustrate this idea. The diagrams in (39a,b) and (40a,b) show both the syntactic and morphological structures for the full form *baterista* (drummer) and its corresponding TF *batera* (drummer), respectively.
39) a) syntactic derivation

\[ \sqrt{\text{BATER}} \rightarrow N \]

b) morphological derivation

\[ N \rightarrow \sqrt{\text{BATER}} \]

\[ N \rightarrow \sqrt{\text{BATER}} \]

\[ bater- -ist- -a \]

(39a) represents the syntactic step of the categorization of the root in the formation of the word *baterista*. At the morphological structure, as can be seen in (39b), a terminal node for the thematic suffix (\( \exists \)) is added to the derivation. No further operation modifies the representation of the full forms and vocabulary insertion applies as in (39b).

The syntactic and morphological derivations of the TF of the types III and IV, in (40), differ from the derivation of their corresponding full forms. In (40), the derivation of TFs of the types III and IV involve the presence of [EVAL], an evaluative category which accounts for their appreciative reading.

40) a) syntactic derivation

\[ N \rightarrow [\text{Eval}, \text{Class II}] \]

b) morphological derivation

\[ N \rightarrow [\text{Eval}, \text{Class II}] \]

\[ N \rightarrow [\text{Eval}, \text{Class II}] \]

\[ bater- \emptyset \emptyset -a \]

[EVAL] does not substitute for the N head which categorizes the root and defines the meaning of the word, as we saw in (39a). It only adds the appreciative reading to the structure which will generate the TF, keeping, for the derivation in (40a), the same category and roughly the same meaning as those in the derivation in (39a). At the morphological structure in (40b), before vocabulary insertion applies, a rule of impoverishment (Bonet, 1991) such as (41) deletes the feature \([n] \) in the category N in the presence of the head [EVAL]:

41) \( N[n] \rightarrow \emptyset / \text{[EVAL]} \).

For that reason, when it comes to vocabulary insertion, no VI marked with the \([n] \) feature, such as \( -ist- \) (42a), for example, will be an adequate alternative for insertion in the terminal node corresponding to N, since it has a feature which is no longer present in the structure. No VI will, then, be inserted in the N head. [EVAL], on its turn, will be filled by a null VI as in (42b). At the morphological structure, terminal nodes for thematic suffixes (\( \exists \)) are added to the derivation and are filled with Vocabulary Items such as those in (42c) (Alcântara, 2010).

42) a) \( -ist- \rightarrow [n] \)

b) \( \emptyset \rightarrow \text{[EVAL]} \)

c) \( -o \rightarrow \text{[Class I]}, -a \rightarrow \text{[Class II]}, -e \rightarrow \text{[Class III]} \)
Evidence for the presence of the EVAL head in the structure of TFs of types III and IV comes from examples such as those from (43) to (45), which are considered as truncated words by some speaker, but are, in fact, cases of words with an appreciative reading that can be attributed to one of its morphological units:

43) a. pad-oc-a (padaria) baker shop
44) a. feij-uc-a (feijoada) Brazilian typical dish made with black beans
45) a. metr-anc-a (metralhadora) riffle

The examples above exhibit explicit marks of diminutive – -oc-, -uc- and -anc – but no diminutive meanings. Rather, the meaning expressed by the words from (43) to (45) converge to an evaluative reading. Their syntactic and morphological derivation can be seen in the representations in (46a,b) below:

46) a) syntactic derivation

\[
\begin{array}{c}
\text{N} \\
\text{Eval} \\
\text{N} \\
\sqrt{PAD} \\
\text{N} \\
\sqrt{FEIJ} \\
\sqrt{METR} \\
\text{N} \\
\sqrt{ROOT} \\
\text{N} \\
\end{array}
\]

b) morphological derivation

\[
\begin{array}{c}
\text{N} \\
\text{Eval} \\
\text{N} \\
\text{N} \\
\text{N} \\
\text{N} \\
\text{N} \\
\text{N} \\
\text{N} \\
\text{N} \\
\text{N} \\
\end{array}
\]

The analysis suggested here highlights the morphological properties of the formation of TFs of types III and IV in BP, characterizing this process as a concatenative one just like the one which derives their corresponding full forms.

5. Final Remarks

In this paper, I argued in favor of a morphological approach to, at least, two types of truncated forms in BP: those which correspond to derived words and preserve the root of their corresponding full forms, adding to them the vowel -a or one the sequences of segments, -as or (i)s.

My claim is that these forms are, in fact, derived independently from their corresponding full forms through a concatenative process of word formation. For that reason, it is not correct to assume that there is a truncation process to derive them: they are syntactically derived from the root, to which a categorizing nominal head and an evaluative morpheme are associated. The presence of the evaluative morpheme leads to the impoverishment of the n feature in the N head, which, consequently, prevents this node to be realized by an ordinary n-categorizer. No phonological expression will, then, be able to realize the derivational suffix in the structure of the TF. They are formed by the root, plus a categorizing and an evaluative head in syntax, as well as a thematic suffix, which is added in the morphological component, in observation of the idiosyncratic condition on word formation in BP, identified in Alcântara (2010).
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