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## FROM SOCIETY TO NEOLOGY AND LEXICOGRAPHY

### Relationships between morphology and dictionaries

**Abstract** This paper aims at verifying if the most important online Brazilian Portuguese dictionaries include some of the neologisms identified in texts published in the 1990s to 2000s, formed with the elements *ciber-*, *e-*, *bio-*, *eco-* and *narco-*, which we refer to as *fractomorphemes* / *fracto-morphèmes*. Three online dictionaries were analyzed (*Aulete*, *Houaiss* and *Michaelis*), as well as *Vocabulário Ortográfico da Língua Portuguesa (VOLP)*. We were able to conclude that all three dictionaries and VOLP include neologisms with these elements; Michaelis and VOLP do not include separate entries for bound morphemes, whereas Houaiss includes entries for all of them and Aulete includes entries for *bio-*, *eco-* and *narco-*. Aulete also describes the neological meaning of *eco-* and *narco-*, whereas Houaiss does not.

**Keywords** Fracto-morphèmes; neologisms in Brazilian Portuguese; Brazilian Portuguese dictionaries

#### 1. Introduction

The aim of this study is to verify if Brazilian Portuguese dictionaries, which are currently available online, incorporate neologisms identified in printed press texts published in the 1990s and 2000s.

Our analysis takes into account some morphemes, observed since the 1990s, that have been reflecting new tendencies of contemporary global (and, in particular, Brazilian) society – *ciber-*, *e-* (Information Technology, Computing); *bio-*, *eco-* (healthy, sustainable life and society) – and some of its problems (*narco-*) (cf. Alves, 2004, 2007, 2009).

These morphemes have been termed differently. Sometimes they are termed *prefixes*, because they occupy the first position in the word, but they have also received specific denominations. In English, they are referred to as “splinters”, a term thus defined by Bauer (2004, pp. 95 f.): “A splinter is a fraction of a word, arising in a blend, then used as an affix to create more words, as *-nomics* in *Reaganomics*, *Clintonomics*, *Thatchernomics* and so on.”

According to Tournier (1985, p. 86), this term was first employed by Adams (1973, pp. 188–98), in order to distinguish among affixes, compound elements and amalgamated elements. This author mentions, as an example, the word *microscope*, in which *-scope* is a splinter. In Brazilian linguistics, authors such as Gonçalves (2016) also use this English term.

Concerning the French language, these elements were studied by Tournier (1985) as “éléments affixés à gauche” (left-hand affix elements), such as *eco-*, *macro-*, *micro-*, *multi-*, *nano-*.

About *eco-* (which we study in this paper) the author writes, in a footnote: “ce fractomorphème connaît une productivité croissante depuis la fin des années 1960” (this fractomorpheme has experienced increasing productivity since the late 1960s) (p. 94). The term *fractomorphème*, widely used in French and also in European Portuguese as the calque *fractomorfema*, is Tournier’s coinage to translate the English term *splinter*. “Un fracto-

morphème est donc un fragment de lexie qui la représente dans un mot construit” (A fractomorpheme is, therefore, a fragment of a word that represents it in a constructed word) (Tournier 1985, p. 86).

Jean-François Sablayrolles, in his studies on neology in French, has employed the term *fractolèxème*, considering it more suitable than *fractomorphème*. Through acknowledging that *fractolèxème* represents a kind of compound lexical unit, he includes *fractocomposition* (*fractocompounding*) in his typology of neologisms. According to his definition, *fractocomposition* “ne se distingue de la composition ‘normale’ que par le fait qu’un des éléments constitutifs n’est pas un mot complet, mais un fragment de celui-ci, qui vaut, sémantiquement, pour l’ensemble” ([fractocompounding] distinguishes itself from ‘normal’ compounding only because one of its elements is not a complete word, but a fragment of it, that has the semantic value of the whole) (2017, p. 54).

In this text, we have chosen to term these elements *fractomorphemes*, following the French tradition as well as some Portuguese and Brazilian authors, such as Lino (1990) and Bizzocchi (2021).

## 1.1 Description of the morphemes

The fractomorphemes here analysed represent elements which have been widely employed since the beginning of the 1990s. *Ciber-*, *e-*, *bio-*, *eco-* and *narco-* picture different aspects which have been posed as representative of the society of this period and of the following decades.

From the technological point of view, there is a development of already used technologies such as the Internet as well as the intensification of the use of cell phones, which have become smaller. The possibilities of virtual communication are considerably expanded, which is expressed by the fractomorphemes *ciber-* (from Eng. *cybernetics*, according to Houaiss) and *e-* (< Eng. reduction of *electronic*, according to Houaiss).

Regarding the environment, the 1990s stood out in relation to the previous periods, due to the importance assumed by the Earth Summit, a conference organized by the UN in 1992, in Rio de Janeiro, also known as Eco 92, which was attended by representatives of several countries. The Eco 92 contributed to bringing together the concepts of society, economy and sustainability, seeking to raise awareness about the importance of taking care of nature so that future generations can enjoy its resources (Takeda 2009). This concern for the care of the environment was reflected in new usages of the elements *bio-* (< Greek *bíos*, ‘life’, according to Houaiss) and *eco-* (< Greek *oikos*, ‘house, household, family’, according to Houaiss).

The 1990s also saw a change in the relationship between drug trafficking and the policies of different nations regarding the circulation and use of drugs in their territories. As Vilela (2015) points out, “Brazil’s stance on the issue of drugs changed significantly in the 1990s, when a series of legislative and institutional apparatuses were established with the aim of fighting drug trafficking, based on the identification of threats associated with this crime” (“A postura do Brasil com relação ao tema das drogas mudou significativamente nos anos 1990, quando uma série de aparatos legislativos e institucionais foram estabelecidos com o objetivo de combater o tráfico de drogas, a partir da identificação das ameaças associadas a este crime”). In this context, the fractomorpheme *narco-*, designating *narcotics*, began to be used in various formations linked to drug trafficking.

It is important to point out that, although the elements *e-* and *ciber-* may be considered ‘pure’ fractomorphemes, the elements *bio-*, *eco-* and *narco-* also have a ‘classical’ usage as compound elements. However, there is a significant difference in meaning between the ‘classical’ compound elements and their respective fractomorphemes. In the case of *bio-*, it is present in compounds such as *biologia* ‘biology’, *biografia* ‘biography’, in which it means ‘life’. As a fractomorpheme, instead of meaning ‘life’ or ‘life-related’, it means ‘related to biology’ or ‘biological’, in words such as *biodiversidade* ‘biodiversity, biological diversity’ and *biopirataria* ‘biopiracy, biological piracy’.

In the case of *eco-*, it forms *ecologia* ‘ecology’ and *economia* ‘economy’, where it means ‘house, household’; as a fractomorpheme, it has the neological meaning ‘ecological’, ‘environment-friendly’ in formations such as *ecoturismo* ‘ecological tourism’, *ecoproduto* ‘environment-friendly product’.

The compound element *narco-* has the meaning ‘numbness, torpor’, in compounds such as *narcótico* ‘substance that causes numbness, narcotic’, *narcolepsia* ‘narcolepsy’. As a fractomorpheme, it means ‘drug-related’, such as *narcotráfico* ‘drug trafficking’ and *narcoeconomia* ‘the economy of drug dealing’.

In regards to the etymology of these fractomorphemes, the morpheme *e-* is clearly a loan from English; the other four may be analysed as reductions or truncations from larger forms (*cibernética* ‘cybernetics’ for *ciber-*, *biológico* ‘biological’ for *bio-*, *ecológico* ‘ecological’ for *eco-* and *narcótico* ‘narcotic’ for *narco-*). But it is certain that their usage in Portuguese is heavily influenced by their usage in other languages (especially English, Spanish and French); thus, all of them may be considered loans to some extent.

## 2. Methodology

Our corpus of neologisms is based on the results of Project TermNeo (*Observatório de neologismos do português brasileiro contemporâneo* – Observatory of contemporary Brazilian Portuguese neologisms). This is a project with the scope of collecting and investigating neologisms present in contemporary Brazilian press (newspapers and magazines) since January 1993 (Alves, 2012; Alves/Maroneze 2021). This project was proposed, similarly to other neology observatories in the Romance languages, following the model of the Laboratory of Lexicological Analysis at the Center for Applied Linguistics (*Laboratoire d’Analyse Lexicologique du Centre d’Etudes de Linguistique Appliquée*) of the Université de Franche-Comté (Besançon, Franche-Comté, France), conceived by the lexicologist and lexicographer Bernard Quemada, in the early 1960s, for the detection of neologisms used in the French language press and their insertion in French language dictionaries.

Project TermNeo, as most projects that describe Romance language neologisms extracted from journalistic language, has considered the absence of a word in a set of contemporary lexicographic works and, more recently, other materials (an exclusion corpus) as the most important criterion for a lexical unit to be classified as a neologism. More recently, the development of Information Technology and Corpus Linguistics has allowed us to improve this methodology using automated techniques.

The data collected by Project TermNeo have been extracted from the highest-circulation Brazilian newspapers (*Folha de S. Paulo*, *O Globo*) and magazines (*Veja*, *IstoÉ*, *Época*), since 1993. The typology adopted by Project TermNeo partially follows the typology initially established by Guilbert (1975), plus some contributions observed in the typologies of Cabré

(2006, 2010) and Sablayrolles (2000, 2017), plus our own reflections: vernacular morphosyntactic neologisms, which include derivation and compounding processes (prefixed words, suffixed words, coordinative compounds, subordinative compounds and syntactic or syntagmatic compounds); semantic neologisms; other processes such as formations with acronyms, truncations, splinters and blendings; and loanwords.

This systematic observation of neologisms has shown that the presence of a neologism not only implies the addition of a new lexical unit in the lexicon of the language but can also point out the existence of a new semantic or morphosyntactic function related to this new word or one of its formative morphemes (as it was studied in Alves/Maroneze 2021).

Through the systematic observation of neologisms from 1993 onwards, we were able to identify the development of a recent pattern of word-formation in Brazilian Portuguese: words formed with elements such as *ciber-*, *e-*, *bio-*, *eco-* and *narco-*, which share some traits with traditional prefixes, but nowadays are best described as fractomorphemes, as already mentioned in the introduction of this paper.

In order to verify if contemporary Brazilian Portuguese dictionaries describe this new pattern, we chose three online dictionaries (described in the following section). The following questions guided our research:

- a) Do the dictionaries include separate entries for these fractomorphemes? If so, do they mention their neological meanings?
- b) Do the dictionaries include neologisms formed with these fractomorphemes? If so, how do they describe their structure?

## 2.1 Description of the dictionaries

The three lexicographical works analyzed here, *Houaiss*, *Aulete* and *Michaelis*, are among the most important Brazilian Portuguese general dictionaries. The main reasons for choosing them were: (i) they are among the largest dictionaries for Brazilian Portuguese which present more than 150,000 entries; (ii) all three have online versions; (iii) their latest versions include some neologisms (as it is shown in this study).

*Aulete Dictionary* was named after Francisco Júlio de Caldas Aulete, the conceiver of the work. Its first edition was published in Lisbon in 1881; its first Brazilian version was published in Rio in 1958. The current version, which was consulted for this study, is the online version. According to Aulete website ([http://www.aulete.com.br/site.php?mdl=aulete\\_digital&op=o\\_que\\_e](http://www.aulete.com.br/site.php?mdl=aulete_digital&op=o_que_e)), the dictionary has more than 818,000 entries, meanings and idioms (*'Mais de 818 mil verbetes, definições e locuções'*).

*Houaiss Dictionary* was named after Antônio Houaiss, the creator and founder of the work. Its first printed edition came in 2001 and is no longer in print. A smaller version was published in 2009 and is sold in print and electronic (CD-ROM) formats. The foreword (Houaiss; Villar 2009, p. XI) informs that its nomenclature contains about 146,000 entries (from the 230,000 in the 2001 full version). There is also the online version, available in online format for subscribers of *Universo OnLine* (UOL) ([https://houaiss.uol.com.br/corporativo/apps/uol\\_www/v5-4/html/index.php#1](https://houaiss.uol.com.br/corporativo/apps/uol_www/v5-4/html/index.php#1)). The website does not mention the total number of entries.

*Michaelis Dictionary* is named after Henriette Michaelis, a German lexicographer from the 19th century who published dictionaries together with her sister, the famous philologist Carolina Michaelis de Vasconcelos. In the 1950s, Melhoramentos publishing house acquired

the rights of the *Michaelis* brand and, since then, has published many bilingual and monolingual dictionaries, most of which are freely available online (<https://michaelis.uol.com.br/>).

The printed version of the *Michaelis* Portuguese Dictionary was published in 1999. According to the website (<https://michaelis.uol.com.br/moderno-portugues/>), the revised version of this work was concluded in 2015 and it is available only in digital format, containing around 167,000 entries.

The dictionaries have certain traits in common: all three have printed and online versions and all three have mini versions for students, made especially for the *Programa Nacional do Livro e do Material Didático* (PNLD – a Brazilian governmental program for school books – <https://www.fnnde.gov.br/programas/programas-do-livro>). They differ in the fact that Aulete has a much older publishing tradition and, in its online version, it also encourages users' participation as collaborators for its development.

In addition to these three dictionaries, we also use data provided by VOLP (*Vocabulário Ortográfico da Língua Portuguesa* – Orthographic Vocabulary of the Portuguese Language), in its 6th edition, since 2021 (also available online – <https://www.academia.org.br/nossa-lingua/busca-no-vocabulario>), which, despite being only an orthographic dictionary, brings 382,000 entries, listing their respective word class labels and other additional information.

### 3. Analysis of the data

The data from Project TermNeo demonstrate some formations with these elements that are sometimes incorporated into the dictionaries. Here we describe both the data from the project and the dictionary entries found for each of the fractomorphemes.

#### 3.1 *ciber-*

Some of the examples with the element *ciber-* observed at TermNeo's neologism database are: *ciberapresentador*, *cibercafé*, *ciberciúme*, *cibercondríaco*, *cibercrente*, *cibercrime*, *cibercrítico*, *cibercultura*, *ciberdemocracia*, *ciberdetetive*, *ciberempresário*, *ciberespaço*, *ciberguerra*, *ciberguerrilheiro*, *ciberlaranja*, *cibermano*, *cibernauta*, *ciberobra*, *cibertecnologia*, *ciberterapia*.

This morpheme, sometimes spelled *cyber-*, as it is in English, has its own entry only in Houaiss (classified as a compounding element), which mentions many examples (some of them with their own entries): *ciberataque* 'cyberattack', *cibercafé* 'cybercafe', *cibercolapso* 'cybercollapse', *ciberespacial* 'cyberspace' (adjective), *ciberespaço* 'cyberspace' (noun), *ciberpirata* 'cyberpirate', *ciberpirataria* 'cyberpiracy', *ciberterrorismo* 'cyberterrorism', *ciberterrorista* 'cyberterrorist'.

In *Michaelis*, the following are included as entries: *cibercriminoso* 'cybercriminal', *cibercultura* 'cyberculture', *ciberdependência* 'cyberaddiction, cyberdependency', *ciberdependente* 'cyberaddicted', *ciberespacial* 'cyberspace adj', *cibermundo* 'cyberworld', among others.

Aulete includes, as entries, *ciberespacial* 'cyberspace adj.', *ciberespaço* 'cyberspace n.', *ciberladrao* 'cyberthief', *cibermaníaco* 'cybermaniac', *ciberpornografia* 'cyberpornography', *ciberpropaganda* 'cyberadvertising', among others.

### 3.2 e-

The morpheme *e-*, also employed in Information Technology and Computing, may be exemplified by the following neologisms (from TermNeo's database): *e-analfabetismo*, *e-book*, *e-cinema*, *e-comércio*, *e-contracheque*, *e-cultura*, *e-curioso*, *e-livro*, *e-trailer*, *e-voto*, among others. It is included as an entry only in Dictionary Houaiss (classified as a compounding element), with the explanation that it is employed in compounds whose second element is usually an English word (*e-book*, *e-mail*, *e-business*) designating activities and products related to the Internet. Aulete includes entries for *e-book* and *e-mail* and Michaelis includes entries for *e-mail*, *e-pub*, *e-tag* and *e-book*.

### 3.3 bio-

Among the formations with *bio-* observed at TermNeo's database, there are neologisms such as *biopirataria*, *bioarqueólogo*, *biocampeão*, *biochip*, *biodiesel*, *biodiversidade*, *bioforma*, *bionauta*, *biopirata*, *bioprospecção*. This morpheme has its own entry in Houaiss and Aulete, but not in Michaelis. Houaiss classifies it as a compounding element, but Aulete says it can be prefixal (as in *biologia* 'biology') or suffixal (as in *micróbio* 'microbe'). Traditionally, it forms words with the meaning 'life', but in neologisms it usually has the meaning of 'healthy' or 'eco-friendly', such as *bioforma* 'bio- + shape, form', *bioorgânico* 'bio-organic'. None of the dictionaries describes the neological meaning of this morpheme. Houaiss includes *bioagricultura* 'environment-friendly agriculture' and *biopirataria* 'biopiracy'; Michaelis also includes *biopirataria*. So far, Aulete only includes the neologism *biodiesel*.

Unlike French, in which the element *bio* may be used as an adjective (*nourriture bio* 'healthy food', *legumes bio* 'eco-friendly vegetables'), in Brazilian Portuguese this usage is unattested.

### 3.4 eco-

The morpheme *eco-* has a meaning close to that of *bio-*, referring to eco-friendly facts. Some of the examples from TermNeo's database are: *ecobesteira*, *ecobife*, *ecodesigner*, *ecofuturista*, *ecoproduto*, *ecoregião*, *ecoturismo*, *ecossonda*, *ecovisitante*. In neologisms formed with this morpheme, sometimes a playful aspect is also observed in words that suggest an exaggeration on environmental concerns: *ecobrigão* from *brigão* 'a person who fights for anything', *ecochato* from 'chato' as in a 'boring person', *ecoxiita* from *xiita*, meaning 'extremist, fundamentalist'...

It is included as an entry in Houaiss and Aulete. Houaiss describes its meaning as 'house', 'habitat', 'family'; Aulete does the same, but also includes the neological meaning 'ecological', mentioning neologisms such as *ecoturismo* 'ecotourism' and *ecoturista* 'ecotourist'. All three dictionaries include entries for *ecoturismo* and *ecoturista*.

### 3.5 narco-

The morpheme *narco-* is observed, in TermNeo's database, in some formations related to illegal drug trafficking and, specifically, to the relationship between drug trafficking and politics, such as: *narcocorrupção* 'narcocorruption', *narcoeconomia* 'narcoeconomy', *narco-*

*parlamentar* ‘narcocongressman’, *narcopolítica* ‘narcopolitics’. It is included as an entry in Houaiss and Aulete, but not in Michaelis. Both dictionaries describe its meaning as ‘numbness’, but Aulete includes the neological meaning ‘related to narcotrafficking’. All three dictionaries include an entry for *narcotráfico* ‘narcotrafficking’; Houaiss and Aulete include also entries for *narcoterrorismo* and *narcoterrorista*; Aulete also includes the neologism *narcotúnel* ‘narco-tunnel, tunnel used for drug trafficking’.

We have also identified that *Vocabulário Ortográfico da Língua Portuguesa* (ABL, 2021) lists neologisms formed with all of the analyzed morphemes, such as: *ciberbullying* ‘cyber-bullying’, *cibercrime* ‘cyber-crime’; *e-book*, *e-commerce*, *e-mail*; *ecopolítica* ‘eco-politics’, *ecoterrorismo* ‘eco-terrorism’; *bioconsciência* ‘bio-conscience’, *bioecologia* ‘bio-ecology’, *biofertilizante* ‘bio-fertilizer’; *narcotraficante* ‘drug dealer’, *narcotráfico* ‘narcotrafficking’.

#### 4. Final remarks

Our analysis has identified that, in general, all four lexicographical works include at least some neologisms formed with these morphemes. The only dictionary that includes entries for all of these morphemes is Houaiss, although it does not mention the neological meaning of *bio-*, *eco-* and *narco-*. Aulete includes most morphemes (with the exception of *ciber-* and *e-*), and it even mentions the neological meanings of *eco-* and *narco-*. Michaelis does not include any entries for these morphemes. The following table summarizes the data.

	Houaiss	Aulete	Michaelis	VOLP
ciber-	<ul style="list-style-type: none"> <li>- Includes a separate entry for the fractomorpheme and classifies it as a compounding element</li> <li>- Includes many neologisms, such as <i>ciberataque</i>, <i>cibercafé</i>, <i>cibercolapso</i>, <i>ciberespacial</i>, <i>ciberespaço</i>, <i>ciberpirata</i>, <i>ciberpirataria</i>, <i>ciberterrorismo</i>, <i>ciberterrorista</i></li> </ul>	<ul style="list-style-type: none"> <li>- Does not include a separate entry for the fractomorpheme</li> <li>- Includes some neologisms, such as <i>ciberespacial</i>, <i>ciberespaço</i>, <i>ciberladão</i>, <i>cibermaniaco</i>, <i>ciberpornografia</i>, <i>ciberpropaganda</i></li> </ul>	<ul style="list-style-type: none"> <li>- Does not include a separate entry for the fractomorpheme</li> <li>- Includes some neologisms, such as <i>cibercriminoso</i>, <i>cibercultura</i>, <i>ciberdependência</i>, <i>ciberespacial</i>, <i>cibermundo</i></li> </ul>	<ul style="list-style-type: none"> <li>- Does not include a separate entry for the fractomorpheme</li> <li>- Includes some neologisms, such as <i>ciberbullying</i>, <i>cibercrime</i></li> </ul>
e-	<ul style="list-style-type: none"> <li>- Includes a separate entry for the fractomorpheme and classifies it as a compounding element</li> <li>- Includes many neologisms, such as <i>e-banking</i>, <i>e-book</i>, <i>e-business</i>, <i>e-ink</i>, <i>e-mail</i>, <i>e-reader</i></li> </ul>	<ul style="list-style-type: none"> <li>- Does not include a separate entry for the fractomorpheme</li> <li>- Includes some neologisms, such as <i>e-book</i> and <i>e-mail</i></li> </ul>	<ul style="list-style-type: none"> <li>- Does not include a separate entry for the fractomorpheme</li> <li>- Includes some neologisms, such as <i>e-book</i>, <i>e-mail</i>, <i>e-pub</i>, <i>e-tag</i></li> </ul>	<ul style="list-style-type: none"> <li>- Does not include a separate entry for the fractomorpheme</li> <li>- Includes some neologisms, such as <i>e-book</i>, <i>e-commerce</i>, <i>e-mail</i></li> </ul>

	Houaiss	Aulete	Michaelis	VOLP
bio-	<ul style="list-style-type: none"> <li>- Includes a separate entry for the fractomorpheme and classifies it as a compounding element</li> <li>- Does not describe its neological meaning</li> <li>- Includes <i>bioagricultura</i> and <i>biopirataria</i></li> </ul>	<ul style="list-style-type: none"> <li>- Includes a separate entry for the fractomorpheme and classifies it as either a prefix (<i>biologia</i> 'biology') or a suffix (<i>micróbio</i> 'microbe')</li> <li>- Does not describe its neological meaning</li> <li>- Includes the neologism <i>biodiesel</i></li> </ul>	<ul style="list-style-type: none"> <li>- Does not include a separate entry for the fractomorpheme</li> <li>- Includes <i>biopirataria</i></li> </ul>	<ul style="list-style-type: none"> <li>- Does not include a separate entry for the fractomorpheme</li> <li>- Includes some neologisms, such as <i>bioconsciência</i>, <i>bioecologia</i></li> </ul>
eco-	<ul style="list-style-type: none"> <li>- Includes a separate entry for the fractomorpheme and classifies it as a compounding element</li> <li>- Does not describe its neological meaning</li> <li>- Includes <i>ecoturismo</i> and <i>ecoturista</i></li> </ul>	<ul style="list-style-type: none"> <li>- Includes a separate entry for the fractomorpheme and classifies it as a compounding element</li> <li>- Describes its neological meaning 'ecological'</li> <li>- Includes <i>ecoturismo</i> and <i>ecoturista</i></li> </ul>	<ul style="list-style-type: none"> <li>- Does not include a separate entry for the fractomorpheme</li> <li>- Includes <i>ecoturismo</i> and <i>ecoturista</i></li> </ul>	<ul style="list-style-type: none"> <li>- Does not include a separate entry for the fractomorpheme</li> <li>- Includes <i>ecoturismo</i> and <i>ecoturista</i></li> </ul>
narco-	<ul style="list-style-type: none"> <li>- Includes a separate entry for the fractomorpheme and classifies it as a compounding element</li> <li>- Does not describe its neological meaning</li> <li>- Includes <i>narcotráfico</i> 'narcotrafficking', <i>narcoterrorismo</i> 'narcoterrorism', <i>narcoterrorista</i> 'narcoterrorist'</li> </ul>	<ul style="list-style-type: none"> <li>- Includes a separate entry for the fractomorpheme and classifies it as a compounding element</li> <li>- Describes its neological meaning 'narcotic'</li> <li>- Includes <i>narcotráfico</i> 'narcotrafficking', <i>narcoterrorismo</i> 'narcoterrorism', <i>narcoterrorista</i> 'narcoterrorist', <i>narcotúnel</i> 'narcotunnel'</li> </ul>	<ul style="list-style-type: none"> <li>- Does not include a separate entry for the fractomorpheme</li> <li>- Includes <i>narcotráfico</i> 'narcotrafficking'</li> </ul>	<ul style="list-style-type: none"> <li>- Does not include a separate entry for the fractomorpheme</li> <li>- Includes <i>narcotráfico</i> 'narcotrafficking'</li> </ul>

**Table 1:** Summary of the data

Now we are able to answer the questions posed at section 2:

- a) Do the dictionaries include separate entries for these fractomorphemes? If so, do they mention their neological meanings?

Houaiss includes separate entries for all of them; Aulete does not include separate entries for *e-* and *ciber-* (possibly because they do not correspond to 'classical' compound elements). However, Aulete is the only one that mentions the neological meanings of two of them (*eco-* and *narco-*).



Michaelis and VOLP do not include separate entries for the fractomorphemes, apparently because they include only ‘full’ words.

b) Do the dictionaries include neologisms formed with these fractomorphemes? If so, how do they describe their structure?

All lexicographical works include at least one neologism for each fractomorpheme.

As already highlighted in Alves/Maroneze (2021), even though the dictionaries’ main goal is to describe individual lexical items, it does not prevent them from describing grammatical facts. The works here analyzed, while relatively up-to-date in terms of including neologisms, are still incomplete concerning the description of morphological elements.

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