A SEMANTIC ANALYSIS OF ‘TAMBÉM’ WITH ADDITIVE USE IN BRAZILIAN PORTUGUESE

Renato Miguel BASSO*
Matheus Bittencourt CIPOLLI**

ABSTRACT: In this paper, we propose a semantic and pragmatic analysis of the Brazilian Portuguese item ‘também’ (also) as an additive particle. In order to do so, we first identify some of the different uses of ‘também’, and then we isolate its use as an additive particle. Next we compare ‘também’ with the English ‘too’, which shows similar behavior in relation to the additive use. We then present the insights and analyzes found in some previous works and analyze in more detail the advantages and disadvantages of the theory proposed by Amsili and Beyssade (2010, 2013) on the additive particles ‘too’ in English and ‘aussi’ in French, when applied to the item ‘também’ in Brazilian Portuguese. We therefore propose, in contrast to Amsili and Beyssade (2010, 2013), an analysis of ‘também’ as an additive particle whose function is to create lists, based on the work of Zhang (2015), which accounts for the problems we detected in the analysis by Amsili and Beyssade (2010, 2013).

KEYWORDS: additive particle; presupposition; semantics; pragmatics.

Introduction

This paper aims to investigate a particular use of the item ‘também’ (also) in Brazilian Portuguese, the one in which this item has the value of an additive particle. We will argue in favor of an approach to the additive ‘também’ based on the idea of creating lists that differ in fundamental points from previous analysis of its equivalent in English (‘too’) and in French (‘aussi’) and which, as it will be demonstrated in this paper, has important advantages over previous approaches.

The section “The Brazilian Portuguese ‘tambéns’” delimits our object of analysis by means of a non-exhaustive list of uses of ‘também’ in Brazilian Portuguese (BP), isolating its use as an additive particle from other possible uses, and it also makes a
comparison between some uses of ‘também’ and ‘too’ in English, an item which has already been described and analyzed in the framework of natural language semantics. Having made this delimitation, in the section “Previous analyses” we present a summary of different approaches to linguistic items with a similar use; our aim is to present the main concepts that underlie the analysis proposed in this work, as well as the problems it solves. In the section “Definition of additive particles”, we introduce the concept of additive particle which will be used for the rest of the paper. The “Definition of additive particles” section also presents the strategy of treating additive operations as functions that result in the creation of lists. This approach is crucial for structuring our proposal, which will be the subject of the section “A new proposal”. Finally, we end this paper with a Conclusion, which resumes our main conclusions and the results achieved, and mentions some of the open problems, followed by the references used.

The Brazilian Portuguese uses of ‘também’

The item ‘também’ presents different uses in contemporary BP that should be distinguished because they have different linguistic properties, so that we can clearly define the uses we will analyze in this paper; this is precisely the purpose of this section. At the end of the section, we will make a brief comparison between ‘também’ and ‘too’, its closest equivalent in English, with the aim of expanding this initial analysis of ‘também’ and helping to understand the semantic-pragmatic analysis proposals for these items that had already been elaborated for English.

Etymologically, the word ‘também’ originates from the contraction of the words ‘tão’ (so) and ‘bem’ (as well), and it is found in written records from at least the 13th century, with a meaning already quite close to some of the ones we have today in BP (cf. Cunha, 2010; Machado, 1987), mainly related to its use as an additive particle (which we will see below). In other words, ‘também’ is the result of a grammaticalization process — a process by which lexical items are transformed, through stages that had already been recognized and described in detail by specialized literature, into functional items. In this particular case, the items ‘tão’ and ‘bem’ come together in a single item that is recognized by traditional grammars as an adverb. Another evidence of grammaticalization is the widespread reduced pronunciation of ‘também’ as ‘tamém’, found throughout the whole country, in addition to the fact that its origin in the items ‘tão’ and ‘bem’ is becoming less and less transparent to present-day speakers.

Some current uses of ‘também’ in Brazilian Portuguese are illustrated by the sentences below. It is interesting to note that some of these uses emerged in the context of Brazilian Portuguese, and they can be considered semantic innovations:1

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1 It would certainly be interesting to look for the origin of these other uses, but this is a task beyond the scope of the present work. Furthermore, the list of uses presented here is not intended to be exhaustive.
Additive particle:

(1) a) João foi na festa também.
    John went to the party too.

b) João também foi na festa.
    John also went to the party.

Interjection/conjunction:

(2) Também, do jeito que ventou ontem, certeza que aquele galho ia cair.
    Also, the way it was windy yesterday, I’m sure that branch was going to fall.

Interjection/expressive:

(3) Você também hein, nem pra tomar cuidado com onde parar o carro.
    You too, huh, not even to care about where to park the car.

In BP, as the examples above illustrate, there are other uses for the word ‘também’, with functions other than that of an additive particle. These functions are so different from that of an additive particle, both in semantic content and in syntactic functioning, that, leaving aside syntactic-semantic compositional mechanisms responsible for isolating these uses of ‘também’, it would even be possible to put forward the hypothesis that we are dealing with distinct linguistic items, despite being homophones. These other functions are at least two, the only ones that will be covered in this section.2 One of them has a function close to that of an interjection,3 with a content similar to expressions like “but of course” or “it is obvious”. This function is exemplified by example (2), above, as well as by example (4a) in contrast to (4b), presented below:4

(4a) — O João chegou tarde pra caramba em casa.
    — João arrived home late as hell.
    — Também, ele foi na festa.
    — TAMBÉM, he went to the party.

(4b) — Cara! Fui numa festona ontem, foi muito louco.
    — Man! I went to a party yesterday, it was really crazy
    — O João foi na festa também./O João também foi na festa.
    — João went to the party too./João also went to the party.

2 We will leave open the possibility of other uses and analyzes for ‘também’, which may, for example, occur in specific varieties of Brazilian Portuguese.

3 For a description and semantic typology of BP interjections, see Basso and Teixeira (2017, 2019).

4 The pronunciation /ta’mejm/ is very common in these cases.
As these examples show, the sentences appearing in second position in the two cases are essentially identical (once the anaphora of ‘ele’ is resolved as being João in (4a)), with the exception of the syntactic position of ‘também’ and the prosody associated with that item in these examples. However, the semantic content, as well as the pragmatic content (considered here as the conversational articulation) of the two responses are quite different.

In (4a), ‘também’ expresses a form of causal relationship, similar to conventional implicatures, which establishes and emphasizes the correlation between João arriving late and him going to the party, whereas in (4b) ‘também’ simply puts João in the group of people who attended the party, and there is no creation (or expectation) of a causal link. It is also interesting to note the always initial syntactic position of the type of ‘também’ that occurs in (4a), which is certainly responsible, along with a specific intonation, for the interpretation we suggest. The ‘também’ of (4b) presents greater syntactic freedom and does not require any specific intonation (i.e., it can be uttered with a standard or flat intonation).

The other use of ‘também’, exemplified in (3), shows the speaker’s opinion, like some expressive items in natural language. Furthermore, the ‘também’ in cases like those in (3) has a peculiar syntactic structure: whereas the ‘também’ in (2), which we classify as an interjection-conjunction, requires a sentence as an argument, the ‘também’ in (3) requires an individual as an argument.

Let’s take one more example:

(5) Você também, hein, foi na festa na véspera da prova.
You TAMBÉM, huh, went to the party the day before the test.

Note that, also in this case, the use of ‘também’ carries a content of disapproval about something relative to the item’s referent that works as its argument, and this configures its expressive character, which is the opinion, in this case a negative one, of the speaker. All these linguistic functions of ‘também’ have their own nuances and particularities, therefore they deserve in-depth and detailed studies, which will not be presented in this paper; here, we focus on a particular use — the additive use, shown in examples (1a) and (1b).

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5 On expressives, see Kaplan (1999), Potts (2005, 2007), Gutzmann (2015), among many others.
6 One piece of evidence for this is that ‘também’ can be used without any kind of explicit continuation, and can indicate a positive or negative assessment by the speaker of a given individual. Imagine sentence (a), addressed to Pedro, when João scolds him for having left the refrigerator door open all night; and imagine the same sentence, addressed to Pedro, when João receives a surprise gift from Pedro:
(a) Você também, hein!
You TAMBÉM, huh!

7 It is also possible to find examples with a “positive” use of this ‘também’, as in the following dialogue:
(a) João tirou 10 de novo!
João scored 10 again!
(b) Também (né) ele é um gênio, né.
TAMBÉM (right) he is a genius, right.
In the next section, we make a brief comparison between ‘também’, as an additive particle, and its English counterpart ‘too’, and then turn to some previous analyzes of this item found in the specialized literature (section “Previous analyses”). This comparison will help us to understand other nuances the items that function as additive particles can have, as well as to highlight the properties of additive particles.

**Between ‘também’ and too**

The word ‘too’ in English, similarly to ‘também’, has more than one meaning, and not all of them are relevant to this paper nor are they equivalent to all the interpretations that we have identified for ‘também’ in BP. In order to clarify the similarities and differences between ‘too’ and ‘também’, we will discuss some of the interpretations of ‘too’ and indicate which of them are the focus of this paper and how they compare with ‘também’. The two most common meanings of ‘too’ found in the specialized literature are the intensifier and the additive.

- **Intensifier:** ‘too’ can be used as an indicator of intensity, pointing out that something has a property or characteristic to a greater degree than what is expected or conventional, or even that something is found in an amount greater than expected, as in the following example:

  (6) You’ve put too much sugar in my coffee.

  This use of ‘too’, although quite productive in English, is not what will be analyzed here. This meaning of ‘too’ is very different from that of an additive particle, resulting in sufficiently different syntactic contexts for the distinction to be made without great risk of ambiguity. There are also important prosodic specificities to this use of ‘too’, but we won’t explore them, here it is enough to note that this use of ‘too’ is distinct from the additive use.

- **Additive:** ‘too’ can function as an additive particle, i.e., it allows multiple items to be included as a single argument of a predicate. In these cases, the item ‘também’ appears as a natural choice for translating ‘too’ into Portuguese.

  (7) — I’m starting to feel hungry.
  — Me too.
  — *Estou começando a ficar com fome.*
  — *Eu também.*

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8 The section “Definition of additive particles” will be dedicated to a more precise definition of additive particles.
(8) Helen’s got a beautiful voice, and she’s a good dancer too.
   *Helen tem uma linda voz e ela é uma ótima dançarina também.*

(9) Taking bribes is immoral. It’s a bad policy too!
   *Aceitar suborno é imoral. É uma política ruim também.*

(10) Of course, our customers complain, but we too have our problems.
    *Claro, nossos clientes reclamam, mas nós também temos nossos problemas.*

Both the syntactic position and the semantic function of ‘too’ and ‘também’ are very similar in these cases, thus justifying the use of the properties postulated for ‘too’ and applying them to ‘também’ and vice versa. It is interesting to mention that Amsili, in his various works on the subject (Amsili; Beyssade, 2010, 2013; Amsili; Ellsiepen; Winterstein, 2012, 2016, among others), compares ‘too’ to the French ‘aussi’, and also concludes that they have several important similarities, mainly regarding their additive interpretation. Let us now present some proposals that have already been made for analyzing ‘too’, ‘also’ and the like.

**Previous analyses**

The interpretation of ‘too’ as an additive particle has already been the subject of several works in the literature on syntax and semantics, as we have mentioned, and in this section we will consider some ideas that can be found in these previous works which, at the same time, also support our proposal and describe properties of ‘too’ that must be explained by any theory that focuses on this item, as well as for ‘também’. Therefore, what follows is just a sample of what is available in the literature, and we do not intend to exhaust the various existing works, but to minimally map the terrain, showing the main issues to be addressed.

Let us first take a pioneering work that investigates the particle ‘too’: the paper “On too and either, and not just too and either, either”, by Georgia M. Green (1968). In it, the author states that ‘too’ and ‘either’ effectively have the same function:9 they are conjunctions that, in certain cases, are accompanied by an implication in which the joint clauses have some internal relevance to each other, and that, in other cases, they work in a way that the author calls “pseudo pronominalization”.10 Then, Green argues that a more complete analysis of such a particle requires a grammar capable of dealing with semantic representations (since her work was done entirely from the generativism perspective in its early years), which is what actually happened in several subsequent works. Both the idea of “pseudo pronominalization” and the idea that ‘too’ has conjunctive properties are ideas presented in different ways in this paper,

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9 The only difference is that ‘either’ has negative agreement.
10 We will return to this issue in the section “A new proposal”.
the conjunctive property being already mentioned above (it will be dealt with in more depth in the section “Definition of additive particles”). The “pseudo pronominalization” is related to the anaphoric property of ‘too/também’, which will be addressed in the section “A new proposal”.

The next work we mention is “Obligatory too in English”, by Jeffrey P. Kaplan (1984), which mainly explores, as the title suggests, the sentences in which ‘too’ is obligatory, and is certainly one of the most important papers on the semantics of ‘too’. In it, Kaplan argues that ‘too’ implies a similarity between the two clauses of the conjunction,\textsuperscript{11} which is quite similar to Green’s (1968) notion of internal relevance. Other interesting conclusions by Kaplan are: (i) one of the effects of ‘too’ is to focus on the clause in which it occurs and (ii) several sentences in which ‘too’ occurs demonstrate anaphoric maneuvers, attributed by the author to the ellipse of a sentence or parts of a sentence. We note that in our proposal, the anaphoric characteristics described by Kaplan are, in fact, consequences of the properties of ‘too’ (and ‘também’) rather than the effect of an ellipse. Finally, Kaplan identifies some sentence configurations that guided subsequent works on the subject. There are (i) sentences in which ‘too’ is obligatory, such as (11); (ii) sentences in which ‘too’ is optional in some contexts,\textsuperscript{12} that is, it does not affect the meaning of the sentence, as in (12); and (iii) sentences in which ‘too’ is optional, but changes the meaning of the sentence, as in (13):

\begin{itemize}
  \item (11a) *John is sick and Mary.
  \item (11b) John is sick and Mary too.
\end{itemize}

\begin{itemize}
  \item (12) a. Jo wrote an article to debunk Chomsky’s claim, and she wrote one to improve her tenure file (too).
\end{itemize}

\begin{itemize}
  \item (13) I bought a car so I could stay out late, and I bought one so I could get to school \{(a) too / (b) Ø\}.
\end{itemize}

It is important pointing out that example (13) has some pragmatic noise,\textsuperscript{13} since its structure is unnecessarily convoluted, as there is no reason for a cooperative speaker to use “one” again instead of “another” in circumstances where they are different cars; nevertheless, the intuition captured by this example still holds: such a realization is part of the need for a more comprehensive way of defining ‘too’, as will be explored in more detail.

\textsuperscript{11} This seems to make sense with the idea that ‘too’, similarly to ‘and’, creates lists, and this similarity, in Kaplan’s (1984) analysis, is a reflection of the process of list creation. This idea will be fundamental to our proposal to be developed in the section “A new proposal”.

\textsuperscript{12} According to Kaplan (1984, p. 511-512), “First note that, when the semantically identical material occurs in full rather than in anaphorically reduced form, too is less obligatory”.

\textsuperscript{13} Especially because in this sentence the author argues that the interpretation with ‘too’ has the interpretation that it is the same car, which is questionable.
In “Additive particles under stress”, by Manfred Krifka (1998), the author analyzes sentences with syntactic parallelism, focusing particularly on the effect that the phrasal stress in ‘too’ brings in such situations, and concludes that ‘too’, together with appropriate phrasal accents (when necessary), serves to select which topic ‘too’ effectively adds information to. Consider the examples in (14):

(14a) Péter probably visited the exhibition, tôo.
(14b) Peter probably visited the exhibition, tôo.\(^\dagger\)

In (14a), ‘too’ focuses on ‘Peter’, but in (14b), the particle focuses on ‘exhibition’. In this context, ‘Peter’ and ‘exhibition’ are what the author calls “contrastive topics”, that is, topics that function as alternative targets for ‘too’. This statement, like others presented in this section, brings to light phenomena that can be explained if we consider that one of the functions of ‘too’ is to form lists with the arguments to which a given predicate applies (something that we will develop later). Therefore, and advancing our analysis a step further, it is interesting to note that the selection between contrasting topics, as presented by Krifka (1998), is nothing more than a way of explaining which element is being added to which list. In the case of example (14a), Peter is added to the list of people who have visited the exhibition, and in (14b) the exhibition is added to the list of places Peter has visited. Such ideas, even if focused on the specificities of anaphora resolution, again reiterate the additive and anaphoric properties of ‘too’ as it will be used in this paper.

We now focus on a recent analysis of the particle ‘too’, which takes into account much of what was previously proposed; namely, Amsili and Beyssade (2010). The analysis and criticism of this work, which we will expose below, partly underlies our own analysis, along with the insights of Zhang (2015).

According to Amsili and Beyssade (2010), the additive particle ‘too’ in English\(^\dagger\) triggers a particular type of presupposition called “obligatory presupposition”, which is characterized by redundancy of information, that is, it is a particle that (i) does not have propositional content, but, at the same time, (ii) is necessary/mandatory in certain syntactic-semantic contexts, as in example (15), below, in English and in BP:

(15) (a) John is sick, Mary is sick too.
   (a’) John está doente, Mary está doente também.
   (b) #John is sick, Mary is sick Ø.
   (b’) #John está doente, Mary está doente Ø.

\(^{14}\) The graphic accents in bold are phonetic accent markings (stress) as presented in Krifka (1998).

\(^{15}\) Amsili and Beyssade (2010) explore ‘too’ in comparison with the French ‘aussi’; in what follows, our focus will be on ‘too’ since, according to the authors, regarding the behavior as an additive particle, the English and French items are quite similar.
Amsili and Beyssade (2010) explain this obligation based on the “Principle of maximizing presuppositions”, introduced by Sauerland (2008). This principle proposes that a conversational contribution should presuppose as much as possible, that is, whenever possible a speaker should choose an item or a construction/formulation that carries as many presuppositions as possible in the face of a plausible alternative in the same circumstances that carries less presuppositional content. The idea is that, if the speaker does not choose to maximize the presuppositions, then the listener should infer that the presuppositions do not apply in that conversation.\(^{16}\)

Amsili and Beyssade (2010) argue that the use of ‘too’ establishes a contrastive relation with ∅, in which the presence of ‘too’ presupposes the existence of another item, which is an argument of a predicate similar (or identical) to the one present in the sentence; in the case of (15), this predicate is ‘be sick’. Given that in this context the assumption of ‘too/também’ is satisfied in case Mary is sick, the use of ∅ is inappropriate, according to the principle of maximizing assumption, since the assumption triggered by this particle is satisfied in the context, thus resulting in an obligatory use of ‘too’ in such contexts. This is why the authors propose that ‘too’ has a “repairing effect”, as its presence restores a configuration that would, according to the principle of maximizing presupposition, be inadequate.

However, it is possible to argue that ‘too/também’ is not necessarily a mandatory particle and that the maximizing presupposition feature does not explain all its occurrences; this is, in our view, an important criticism of such an approach, which motivates the search for alternative analyzes. Evidence in favor of this idea can be seen in example (16) below — note that both sentences (16a) and (16b) are acceptable but have different propositional contents.

\[(16a) \quad \text{Compra um McLanche feliz, mas se você estiver com muita fome compra um BigMac.}\]
\[
\text{Buy a Happy Meal, but if you are really hungry buy a BigMac.}
\]

\[(16b) \quad \text{Compra um McLanche feliz, mas se você estiver com muita fome compra um BigMac também.}\]
\[
\text{Buy a Happy Meal, but if you are really hungry buy a BigMac too.}
\]

As these examples show, not only is ‘too/também’ not obligatory, but it also has assertive/propositional content, which is contrary to a key aspect of Amsili and Beyssade’s proposal (2010, p.18), according to which ‘too’ has no assertive/propositional content: “We claim that obligatoriness defines a subclass of presupposition triggers, characterized by the fact that they have no asserted content.”.

\(^{16}\) An example of this phenomenon is the case where there is an alternative between the verbs ‘to know’ and ‘to think’ (in which the presuppositions of the verb ‘know’ are satisfied, but the speaker chooses to use ‘think’). The verb ‘to know’ is clearly preferable, as it presupposes more than ‘to think’, as, for example, in “Maria thinks that she has the flu” as opposed to “Maria knows that she has the flu”. For more details, see Schlenker (2008) and Percus (2006).
However, the contrast between (16a) and (16b) shows that the role of ‘too/também’ is more than being a obligatory presuppositional trigger: in (16a), the option without ‘too/também’ is perfectly acceptable, resulting in an interpretation that the suggestion is two options, one being the McLanche Feliz/Happy Meal and the other the Big Mac; however, with ‘too/também’, as in (16b), buying only a Big Mac is no longer an option, and the purchase of the Big Mac now includes the McLanche Feliz/Happy Meal. In the view of examples like these, the description of the particle ‘too’ as an obligatory presuppositional trigger as suggested by Amsili and Beyssade (2010) is not enough to accommodate its semantic contribution because presuppositions do not affect the assertive content/propositional of sentences, as in example (16).

Even if the syntactic context of (16) is different from the one in (15), the role of ‘too/também’ is arguably the same, or, at least, quite similar, which indicates that we are dealing with the same particle, with the same semantic function. This makes the propositional difference between (16a) and (16b) particularly intriguing, as it cannot be attributed to any other item, since the only difference between the two is, as we said, the presence or absence of ‘too/also’. On the other hand, taking into account that this structure is a case of a new function of ‘too/also’ brings several problems, for example: How to differentiate the two functions? What contexts are appropriate for one and the other? Why are they so similar?

In this paper, we consider the hypothesis that we have the same particle, since the definition proposed in the section “Definition of additive particles”, as we will argue, is sufficient to explain all the cases considered here as well as (16). In conclusion, it is necessary to explain cases such as (16), and since our proposal does that, it is more economical and comprehensive.

Consider the following examples:

(17a) Come by this afternoon, and remember to come with your scarf on, or if it’s too cold, with your gloves.  
Passe aqui hoje à tarde, e lembre de vir com o cachecol, ou se estiver muito frio, com as luvas.

(17b) Come by this afternoon, and remember to come with your scarf on, or if it’s too cold, with your gloves too.  
Passe aqui hoje à tarde, e lembre de vir com o cachecol, ou se estiver muito frio com as luvas também.

(18a) After this song they’ll play “Índios”, unless they’re given more time, because then they will play “Faroeste Caboclo”.  
Depois dessa música eles vão tocar “Índios”, a não ser que liberem mais tempo, porque ai eles vão tocar “Faroeste Caboclo”.
After this song they’ll play “Índios”, unless they’re given more time, because then they will play “Faroeste Caboclo” too.

Depois dessa música eles vão tocar “Índios”, a não ser que liberem mais tempo, porque aí eles vão tocar “Faroeste Caboclo” também.

These examples present in their structure a conditional alternative operation, marked by the sequences “or if” (“ou se”) and “because then” (“porque aí”). This conditional alternative operation reveals a crucial property of ‘too/também’ as an additive particle, which is its ability to alter the propositional content asserted by the sentences, since the differences between each of the pairs above cannot be the result of presuppositional operation. Since there is no uniqueness triggered in this context, as a result of the presence of two alternatives, the analysis proposed by Amsili and Beyssade (2010) does not adequately describe these contexts. These pieces of evidence point to the need of a new approach to ‘too/também’ as an additive particle.

In the following sections such an approach will be presented, and it will account for all the properties of ‘too/também’ as an additive particle already presented in this paper. First, we need a definition of a list formation structure, and we will use one in Zhang (2015), which we present below. We will also argue that it is possible to explain the anaphoric and presuppositional properties of ‘too/também’ as an operation on lists conceived as information storage structures.

**Definition of additive particles**

Up to this point, we have used an intuitive notion of additive particles, as items that increase the arguments to which a predicate applies, and that accounts for the analyzed cases. More formally, we will adopt the definition of additive particles proposed by Linmin Zhang (2015), which can be briefly summarized as follows: an additive particle, such as ‘and’ or ‘or’, is an operator that takes two elements of the same syntactic and semantic type as input and combines them to result in a single syntactic element of one and the same semantic type. However, the most relevant part of such a proposal, for the purposes of this paper, is not particularly the effect that the additive particles have on the context in which they are found, but rather the process by which this result is achieved.

To approach the details of Zhang’s (2015) proposal, it is first necessary to analyze the two hypotheses made by Winter (2006) that Zhang (2015) criticizes and the problems the author points out in these hypotheses. It is precisely these problems with Winter’s (2006) hypotheses that led Zhang to her proposal. Let’s begin with the analysis of the items ‘and’ and ‘or’ and then turn to the analysis of ‘too’.

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17 “And/or takes arguments of the same type and returns an output of that type” (Zhang, 2015, p. 3).
Conjunction as an additive particle

Winter’s (2006) first hypothesis is that the particle ‘and’ \( (‘e’, \text{ in BP}) \) consists of a binary operator that can occur silently. This hypothesis defines multiple coordinations as successive recursive applications of this binary operator in a nested way. It is precisely in this definition of multiple coordinations that the problem presented by Zhang (2015) is found, in that this definition predicts more readings than certain contexts actually allow. Such a situation can be observed in (19): according to this hypothesis, (19a) and (19b) would be semantically equivalent, but this is not the case. For (19a) to be true, we can consider scenarios in which two or three requirements are made, as represented below. However, (19b) only allows the reading that there are three distinct requirements, excluding the possibility of there being two, unlike (19a). This difference, as noted by Zhang (2015), cannot be explained by a hypothesis that considers that ‘and’ \( (‘e’) \) is a recursive binary operator with a nested structure.

(19a) \textit{Você precisa} \([\text{ dançar e pular} \) \textit{e cantar}. \\
You must \([\text{dance and jump}] \) and sing. \\
Two possible interpretations: \\
\(\checkmark\) 2 requerimentos (dance & jump; sing); | \(\checkmark\) 3 requerimentos (dance; jump; sing)

(19b) \textit{Você precisa dançar, pular e cantar}. \\
You must dance, jump and sing. \\
Only one interpretation: \\
\#2 requerimentos; | \(\checkmark\) 3 requerimentos (dance; jump; sing)\textsuperscript{19}

A second problem author pointed out by Zhang (2015) in Winter’s hypothesis (2006) is that it predicts undesirable results, as can be seen in (20).\textsuperscript{20} In this example, since no rule is clearly defined for the deletion of ‘and’ in coordinations, the particle can appear in arbitrary positions, which demonstrates the need to a more detailed hypothesis regarding the function and definition of the additive particle.

\textsuperscript{18} Winter (2006) and Zhang (2015) theories to a large extent also apply to the particle ‘or’ \( (‘ou’, \text{ in BP}) \), since the focus of their analyzes is Multiple Coordinations, and both these particles are capable of building them. However, given the scope of the present paper, the inclusion of ‘or’ in the definitions will be omitted for the sake of simplicity and economy.

\textsuperscript{19} Examples adapted from Zhang (2015, p. 3).

\textsuperscript{20} Originally example 7 in Zhang (2015, p. 3).
(20) *Al, Bill and Cal, Jo smiled. (meaning Al, Bill, Cal and Jo smile)

Logical form of multiple coordination:

A similar problem is noticed in Winter’s (2006) second hypothesis, as introduced by Zhang (2015), in which we observe that there is a paradigm shift in the way the operator works: now the operation of applying successively a binary operator can be generalized into a n-tuple operator (that is, an operator that has n elements as arguments), so that in multiple coordination, all instances of such an operation would be silent except the last one.21

However, this definition is also inadequate, and allows the generation of another type of undesirable results, as can be seen in example (21), adapted from Zhang’s (2015, p. 4) example 9, and also in example (22).

(21) *A, and B, C, D and E smiled. (meaning A, B, C, D, and E smiled.)

Logical Form:

a. *A, and B, C, D and E smiles. (intended meaning: A, B, C, D, and E smiled.)

b. 

(22) a. João and Paulo, Alberto, Pedro and Júlio went to my house yesterday.

b. João, Paulo, Alberto, Pedro and Júlio went to my house yesterday.

Examples (22a) and (22b) are not completely equivalent, and, according to Winter’s hypothesis (2006), this would be precisely the expected result, since using two operators (a 2-tuple and a 4-tuple) the generated results should not be different from a 5-tuple operator, since this type of operation does not impose a semantic hierarchy between its internal items or in terms of the result of the operation, nor is there any rule in this case that requires only one operator to be used when possible. However, looking carefully

21 The criticism of Winter’s (2006) second hypothesis, as presented in Zhang (2015), is: “In Winter (2006), Hypothesis 2 proposes that binary operators and and or can be generalized into n-ary operators with a recursive definition (see (8a) and (8b)), so that MC [multiple coordination] is built with a flat structure, as (8c) shows. Also a stipulation is needed here: and and or are never silent in MC, but always pronounced right before the rightmost item.”.
at example (22a), the interpretation is that ‘João and Paulo’ form a distinct group and that this group is occupying the space of an element of the list in which it is included.

The core of these problems lies in the fact that there is no comprehensive definition of the particle ‘and’ (‘e’), especially its connection with the rest of the multiple coordination, thus Zhang (2015) proposes that the operation of additive particles\(^{22}\) consists not of a single operator, but of a set of three operations that are always represented by only one instance of additive particle, and all these operations affect a list with properties similar to those of the list function (or “list”) of a programming language like Haskell, that is, an ordered sequence of items or values of the same type. Let’s see how this works in more detail below.

Zhang (2015, p. 4–7) argues that ‘and’ is actually a binary operator that operates on the information structure of a sentence, and the operation it performs is the creation of a list. This is done in three parts: (i) a list construction operation, which consists of adding an item to a list (it can be a list consisting of a single item); (ii) a selection operation which, in this case, consists of applying an identity function on the list; (iii) a fold function,\(^{23}\) demonstrated in example (23), which uses contextual information to determine which operation would be distributed to all items of the list, making the list a single object.

(23a)  
\(\text{João, Maria e Pedro se sentaram. — cada um individualmente.}
\)  
John, Mary and Peter sat down. — each one individually.

(23b)  
\(\text{João, Maria e Pedro construíram a casa da Joana. — juntos, coletivamente.}
\)  
John, Mary and Peter built Joan’s house. together, collectively.

Of these operations, the one that is most relevant for this paper is (i), the list formation operation, since operation (ii), of selection, is of little relevance given that its function is limited to distinguishing between disjunctions and conjunctions. Since we are dealing with a conjunction, this point becomes less relevant. In turn, the fold function, despite being an interesting way of dealing with the issue of distributive vs. collective interpretation (for more details see Champollion (2014) and Nicolae \textit{et al.} (2016)) is not the only possibility (also our analysis is not predicated on this particularity, thus being potentially compatible with more than one way of describing this phenomenon).

In this definition, one can see the versatility of processing multiple coordination as a list, since this is an efficient way to process an arbitrary number of possible items in a coordination, preserving clear and well-defined rules about when operators can be omitted and the consequence of this omission in the resulting structure.\(^{22}\) Far, in summary, we have presented some of the relevant problems in the semantic description of additive particles, as well as a possible solution based on the idea of lists.

\(^{22}\) Zhang’s (2015) hypothesis, as well as Winter’s (2006), also apply to disjunctive particles such as ‘or’ (‘ou’, in BP), but they are beyond the scope of this paper.

\(^{23}\) Note that the \textit{fold} function is a specific type of function in computation, which, in association with some operation, applies that operation to all members of a set.
In view of the versatility of Zhang’s proposal (2015), in the remainder of this paper this will be the approach adopted regarding the functioning of additive particles.

The case of ‘também’

Once the concept of additive particle is defined, we can explore the additive property of the ‘too/também’. In Zhang’s (2015) work, the only items to which additive properties are attributed are ‘and’ and ‘or’; for dealing with ‘também’, as we argue below, the relevant item is ‘and’, since it shares many functional similarities with ‘too/também’.

In the context of examples (4), (7) and (9), we can see that not only the structures of ‘and’ and ‘e’ are similar, but that ‘too’ and ‘também’ have the property to add a new element to a pre-established list; thus, at least at first, it can be assumed that some of the processes described in Zhang (2015) should apply to ‘too/também’ as an additive particle.

Such reasoning is in line with the ideas expressed in Green (1968), Krifka (1998) and Szabolcsi (2017) in which the authors consider ‘too’ as a particle with additive properties, therefore, comparable to ‘and’. However, ‘too/também’ also has properties different from ‘and/e’. The first and most notable of these properties is the possibility of not being adjacent to the content on which the additivity will be applied, as can be seen in example (24), where Rui is added to João and Pedro, even though it is placed far from the initial coordination. In this paper, there will not be a detailed discussion about the comparison between ‘too/também’ and ‘and/e’. Although such a discussion is necessary and productive, at this moment the similarity exposed by the example showing that they are capable of formulating lists is enough to base the structure of the proposal to describe ‘too/também’.

(24) Eu estava jogando bola com o Pedro e o João no sábado passado, todos curtiram jogar bola, até o Rui, que também foi, mas participou pouco.
I was playing soccer with Pedro and João last Saturday, everyone enjoyed playing soccer, even Rui, who also went, but he didn’t participate much.

It is interesting to note that these functions are present in coordinations, but they are not always triggered by an explicit particle, in certain contexts, as below:

(25) Mário tá doente; Pedro tá doente; meu irmão tá doente. O que tá acontecendo?
Mario is sick; Pedro is sick; my brother is sick. What is happening?

(25) is a conjunction but we only know this due to the continuation “What is happening?”, since the text that brings the elements of the list without an explicit particle — “Mario is sick; Pedro is sick; my brother is sick” — is ambiguous. This list can be taken as a conjunction, as in example (25), or as a disjunction, as in examples...
(26) and (27), which demonstrates that this atypical structure without demarcations is not inherently a conjunction, but rather, is still susceptible to the following context.

(26) Mário tá doente; Pedro tá doente; meu irmão tá doente?
Mario is sick; Pedro is sick; is my brother sick?

(27) Mário tá doente; Pedro tá doente; meu irmão tá doente; ou é o seu primo que tá doente?
Mario is sick; Pedro is sick; my brother is sick; or is it your cousin who is sick?

Furthermore, this omission of the additive particle presents a prosody different from that of typical coordinations, in which the last element of the list has a prosodic curve distinct from the previous items, and in this case all items are accompanied by a very similar prosody.24

It is reasonable to postulate that in example (25) this ambiguity is resolved due to the pragmatic principle of maximizing informativeness — it is a principle derived from the Gricean Maxims that determines that there is a preference for structures with greater informative content. Since the conjunction is more informative than the disjunction, in the absence of a decisive factor the conjunction is the preferred alternative by default. However, the final result, that is, the list produced, even in sentences of this type, does not differ from any other produced by multiple coordination.25

Once the previous analyzes have been demonstrated, as well as the necessary tools, the next section will build on these parts to create a new way of analyzing ‘também’, more concise and comprehensive than the previous ones.

A new proposal

Our proposal on how to define the meaning and linguistic contribution of ‘too/também’ is based mainly on its function as an additive particle, as defined in the section “Definition of additive particles”, in which we could observe that ‘too/também’, according to this analysis, has the property of adding an item to a non-null list.26 This property can, in principle, explain both examples of the type presented in (15a) and those of the type presented in (16b). In (15a), the list ultimately formed is the John and Mary list, while in (16b), the list is Happy Meals and Big Macs.

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24 This phenomenon certainly deserves further study, but its phonetic nature puts it outside the scope of the present study, which focuses on the semantics of these phenomena.

25 The discussion of lists created without additive particles, as interesting as it may be, does not fall within the scope of this paper, since the relevant structures, which are the functions that Zhang (2015) uses to define additive particles, are not significantly affected by this type of phenomenon.

26 The other two functions described in the previous section still apply, but for the purposes of this analysis list formation is the most pertinent.
The list explains the anaphora process as it establishes the indexing rules and the manner in which indexed items are treated. It is worth noting, however, that the typical constraints of contextual salience still apply as with any type of anaphora. That said, the resolution reduction of this process can be seen by looking at the analysis of the following example:

(28a) João foi à praça comprar cebolas na quinta-feira. Ele ficou muito frustrado com o preço e quase brigou com a vendedora. Ele também fez caminhada e jogou tênis antes de voltar para casa.
João went to the market to buy onions on Thursday. He was very frustrated with the price and nearly got into a fight with the saleswoman. He also went hiking and played tennis before returning home.

(28b) João foi à praça comprar cebolas na quinta-feira. Ele ficou muito frustrado com o preço e quase brigou com a vendedora. Joana também comprou cebolas, mas ela foi mais esperta e comprou na outra feira que era mais barata.
João went to the market to buy onions on Thursday. He was very frustrated with the price and nearly got into a fight with the saleswoman. Joana also bought onions, but she was smarter and bought them at the other fair, which was cheaper.

(28c) João foi à praça comprar cebolas na quinta-feira. Ele ficou muito frustrado com o preço e quase brigou com a vendedora. Ele também comprou bananas e laranjas antes de voltar para casa.
João went to the market to buy onions on Thursday. He was very frustrated with the price and nearly got into a fight with the saleswoman. He also bought bananas and oranges before returning home.

As can be seen, the selection of the material that will work as an antecedent is done by the predicate that accompanies each ‘also/também’, and the structure is always the same: the predicate containing ‘also/também’ establishes a list that includes the antecedent, which shares the same function of the predicate, be it the main predicate (verb), in (28a), the list is made up of things that João did, i.e. bought onions, walked and played tennis —, or any of the argument positions of the predicate; in (28b) and (28c), there are lists of people who bought onions (João and Joana), and things that João bought (onions, bananas and oranges), respectively, respecting the predicative structure that accompanies the occurrence of ‘also/também’.

However, there is a problem with using this definition for ‘also/também’, as this particle has a crucial difference with additive particles, in that it does not need to be adjacent to the other elements in the list. For this reason, it is necessary to observe that ‘too/também’ has anaphoric properties, as Roberts (manuscript) argues and as
has been noted since at least the work of Green (1968). Therefore, it is necessary to define how ‘too/também’ selects its anaphoric content. The proposed solution that will be defended here is that the anaphora is always dictated by the predicate to which the additive particle is associated with. Therefore, every time ‘too/também’ is used in a given context, there must either be an explicit antecedent or there must be common ground information that allows this use, as in the example in (29):

(Consider the following sentence written on the window of a coffee shop)
(29) Nós temos comida também.
We have food too.

In this example, the anaphora of ‘too/também’ relies heavily on some broad pragmatic maneuvers, such as the use of world knowledge; for example, this sentence would not make much sense in a restaurant window, precisely because the idea of having food there is obvious, and therefore saying “we have food” would be redundant. On the other hand, the use of the additive particle in this case is only possible because a coffee shop is expected to offer several things, and, therefore, ‘too/também’ would be adding something to the implicit list of things that a coffee shop offers; such a list can only be accessed by the expected knowledge of someone who reads this sentence that a coffee shop primarily sells coffee and does not necessarily need to sell food to be considered a coffee shop, as well as it is not contradictory that coffee shops eventually sell food.

Finally, we can turn to the obligatory effect of ‘too/também’, shown by Amsili and Beyssade (2010) in examples such as (15a), repeated below:

(15a) John is sick, Mary is sick too.
(15b) #John is sick, Mary is sick Ø.

In this case, we argue that such an effect can be explained by pragmatic maneuvers. For (15b), we notice that the problem, at least according to our proposal, is that there is the same predicate associated with two objects in two different instances; therefore, it is expected that these predicates mean different things, because in a context where the predicate would be the same, it would be expected that both objects would be together, united by an additive particle under the same predicate; in such cases, the additive particle would work to repair the fact that these two objects are arguments of the same predicate, despite the fact that the predication is repeated. That is, in this context ‘too/também’ works as a kind of repairer for a sentence that would be pragmatically anomalous in its absence — but it is important to note that this “repairing effect” is a consequence of the property of creating lists that ‘too/também’ has, and not the other way around, that is, it is because this item can create lists that it can be used as a “repair element” in certain structures.

On the other hand, sentences like (15a) use an unusual pragmatic form, with the repetition of predicates to generate focus, which is usually an effect attributed to the
particle ‘too/também’ (Kaplan, 1984; Krifka, 1998), but it is plausible that this is influenced by the act of structuring the sentence in a pragmatically “unexpected” way, thus causing the focus effect. In this context, ‘too/também’ would serve two functions: (i) to create a list, which, as we will argue below, is a more economical way of dealing with information,27 and (ii) to direct the focus, perhaps with the help of (optional) phrasal accents (Krifka, 1998). However, the pragmatic maximum of quantity does not seem to be sufficient in certain cases, such as, for example, (30) (Amsili; Beyssade, 2010, p. 6) and in its BP translation in (31):

(30) Swift Deer could see pine-clad mountains on the other side of the Rain Valley. Far away to the east and west the dry prairies stretched out as far as the eye could see. To the north lay the yellow-brown desert, a low belt of green cactus-covered ridges and distant blue mountain ranges with sharp peaks. To the south (# ∅ / too) he could see mountains.28

(31) Swift Deer podia ver montanhas cobertas de pinheiros do outro lado do Vale da Chuva. Bem longe a leste e oeste as pradarias secas se estendiam tão longe quanto os olhos podiam ver. Ao norte, ficava o deserto amarelo-amarronzado, um baixo cinturão verde de cumes cobertos por cactos e distantes cadeias de montanhas azuis com picos afiados. Ao sul ele (# ∅/ também) podia ver montanhas.

In this example, there is clearly no more economical way to say that there were mountains to the south and north and still preserve all the information. In any case, one can argue that a list structure is informationally economical, as it recycles information present in the context rather than introducing information as entirely new, which demands a distinction between new information and other information already contained in the context. However, when lists take advantage of already introduced contextual contents, the amount of new information is reduced, and thus lists are more efficient. Therefore, the use of ‘too/também’ at the end of the example argues for this argument.

Our proposal contemplates the cases where ‘too/também’ is clearly an additive particle such as in (32), in which a list is also created containing the place where the context of the sentence is located and the place near the speaker’s house as a list of places selling the “stuff”. Furthermore, our proposal covers situations such as (33) and (15), in which the list creation process is an elegant solution as a way of repairing a pragmatically odd construction. Finally, our proposal also manages to deal with examples such as (34) and (16b), in which the creation of lists involves a disjunction created by the word ‘or/ou’; in this cases, the resulting list is on one side of the disjunction and one of its

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27 Because the effect of creating a list is not lost when assigning focus; the focus is even amplified by the structure of the list, since the focused element is contrasted with the other elements belonging to the list.

28 Example (11) in Amsili and Beyssade (2010).
forming elements is on the other, and there is no effect of content updating that one finds in lists created by additive particles, but rather an opposition of the list with the two elements and one of the elements alone.

(32) *Por que a gente veio até aqui mesmo? Lá perto de casa também vendia esse negócio.*
Why did we even come here? There, close to our house, they also sold this stuff.

(33) *O meu primo votou nele e a minha tia também.*
My cousin voted for him and so did my aunt.

(34) *Você vai no cinema ou vai no teatro Ø/também.*
Do you go to the movies or to the theater Ø/also.

Let us then move on to the conclusions of this paper.

**Conclusion**

In our analysis, we conclude that Amsili and Beyssadess (2010) proposal for ‘too’ as an obligatory presupposition particle is not entirely adequate, as it requires that this item does not have any assertive/propositional content, and, as we have shown in this paper, with the analysis of examples with the structure of (16), this is not always the case. This does not mean, obviously, that the concept of obligatory presupposition is not suitable for the other structures analyzed in Amsili and Beyssade (2010), but this discussion is beyond the scope of this paper.

Furthermore, we conclude that the particle ‘too’ shares enough characteristics with ‘também’ (at least with regard to the additive use of both) for the same analysis to be applicable to both items, and among such shared characteristics there is their anaphoric property.

Putting the pieces together, we propose an analysis that, through the idea of extending the list-forming capacity to the particle ‘também’, captures more efficiently the anaphoric properties of ‘também’, because adding elements to lists allows anaphoras to be clearer and more direct, since the anaphoric maneuver now consists of creating a list composed of an element, previously present in the context, and adding to a list which is created at the moment of the anaphora resolution.29 This strategy also makes anaphora closer to the typical functioning of a simple conjunction, thus generating economy in the anaphoric process, since it is not necessary to use other theoretical tools.

29 Or updated, in case the anaphoric resolution returns a list with just one element.
This economy, combined with the ability to adequately describe both focal particle uses and conditional alternative contexts, is one of the most important contributions of this paper. That being said, some of the details of the way in which the predicate is resolved in the anaphora still remain to be worked out, as well as some details of the anaphoric resolution processes.

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PALAVRAS-CHAVE: partícula aditiva; pressuposição; semântica; pragmática.

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