

Bare plurals and achievements: a case study of aspectual verbs

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Abstract

This paper aims to analyse in what way Brazilian Portuguese bare plurals affect the aspectual structure of a sentence whose VP is headed by an achievement verb. In order to achieve this goal, we will study the interaction of these VPs composed by achievements with aspectual verbs. We will argue that: a) achievements do not have the property of S-cumulativity (Rothstein, 2004), b) aspectual verbs select as complements predicates which have the property of S-cumulativity, and c) the property of S-cumulativity is the semantic contribution given by bare plurals to the aspectual structure of the sentence. Based on these ideas, we predict that the sentences formed by the combination of an aspectual verb and a VP whose structure is [achievement verb – NP] will be grammatical only if the NP complement of the achievement verb is a bare plural. This is the way by which this constituent will satisfy the selectional constraints imposed by the aspectual verb.

Introduction*

The main aim of this paper is to explain the contrasts observed in (1a) and (1b), related to the possibilities of complementation of aspectual verbs in Brazilian Portuguese (henceforth BP):

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- (1) a. #João começou a recolher a moeda¹.
 John began to catch-INF the coin
 ‘John began to catch the coin.’
 b. João começou a recolher moedas.
 John began to catch-INF coins
 ‘John began to catch coins.’

An aspectual like *começar* (‘to begin’) cannot appear in sentences with an achievement verb followed by a singular quantized noun phrase (NP)² as (1a), but, if we change the quantized NP by a bare plural, the combination of the aspectual with the same achievement verb becomes grammatical as in (1b).

The only difference between (1a) and (1b) is the nature of the NP complement of *recolher* (‘to catch’). Due to this, we will assume that certain types of NPs can change the aspectual structure of the constituent they are part of. In connection with this claim two related questions arise. The first is: What is the nature of the change that some NPs make in the aspectual makeup of the constituent they are part of? The second is: Why does this change allow for the combination of the aspectual verb and this constituent?

Based on Rothstein (2004), we propose that aspectual verbs such as *começar* (‘to begin’), *continuar* (‘to continue’) and *parar* (‘to stop’) select for S-summative predicates, like *correr* (‘to run’), an activity predicate, in (2):

- (2) a. João começou a / continuou a / parou de correr.
 John began to / continued to / stopped of run-INF
 ‘John began to run / continued to run / stopped running.’

Combining this proposal with our assumption about the role of NPs, we hypothesize that bare plural NPs can modify the aspectual structure of a predicate bringing to it the S-cumulativity property required by aspectuals.

The paper has the following structure. Section 1 deals with the aspectual nature of predicates. We present Vendler’s (1957/1967) influential four-way classification of predicates and Rothstein’s (2004) reinterpretation of Vendler’s work, which will be our framework throughout this paper.

In Section 2 we focus on the semantic nature of nominal constituents in BP. We will show our assumptions about the denotations of bare plurals and singular quantized nouns in this language. Essentially we will assume that the difference between these NPs has to do with the fact that bare plurals denote plural entities, and singular quantized NPs do not.

In Section 3, we analyze the syntax of aspectual verbs in BP in terms of: a) the kind of eventualities they select for, and b) the nature of the constituent

¹ It is possible to interpret this sentence only in a “slow-motion” scenario. For simplicity’s sake, we will exclude this reading from our discussion.

² For expository purposes, we will assume that nominal arguments are NPs, ignoring the distinction between DP and NP.

they combine with. Our proposal is that aspectual verbs, like *começar* (to begin), *continuar* (to continue) and *parar* (to stop), require that their VP complement is S-cumulative.

Section 4 brings our analysis. We will explain the contrast observed in (1), arguing that the denotation of some NPs can change the aspectual structure of the predicate they are part of. We will argue that when a bare plural is merged with an achievement, the constituent that results is interpreted as a sum of eventualities – the effect that we have in the S-cumulativity. Having this interpretation, this constituent can be further merged with an aspectual verb. When a singular quantized NP is combined with an achievement, the constituent that is formed does not have the same kind of reading, and the result of its combination with an aspectual verb is an ungrammatical sentence.

Finally, in Section 5 we present our conclusions and a brief discussion of the similarities and differences between bare singulars and bare plurals.

1. On the aspectual nature of predicates: Vendler's (1957 / 1967) four aspectual classes of predicates

Vendler proposed a four-way classification of predicates (verbs, in his terminology) based on two characteristics related to their internal temporal structure (aspectual structure): the first is the (in)existence of “successive phases following one another in time” (Vendler, 1957: 144) and the other is the (in)existence of “terminal points” (Vendler, 1957: 145).

From the combination of these characteristics the result is the definition of four classes of predicates, as we can see in (3):

(3)

	[+successive phases]	[-successive phases]
[+terminal point]	<i>Accomplishments</i>	<i>Achievements</i>
[-terminal point]	<i>Activities</i>	<i>States</i>

Accomplishments are events composed by successive phases and an endpoint. In (4), the progression of this event leads to an endpoint: the event of *desenhar três círculos* is over when the three circles are drawn:

- (4) A menina desenhou três círculos.
'The girl drew three circles.'

Achievements are events which have an endpoint but do not have successive phases (they are instantaneous events). In (5), the event is instantaneous and has an endpoint: the moment when the answer was discovered.

- (5) O menino descobriu a resposta do enigma.
‘The boy discovered the answer to the enigma.’

Activities have phases but no endpoint is associated with them:

- (6) O convidado bebeu vinho.
‘The guest drank wine.’

Finally, *states* are predicates which have neither phases nor endpoints:

- (7) O aluno teve uma tendinite.
‘The student had tendinitis.’

1.1 Reinterpreting the aspectual classes

Several works have been written about Vendler’s aspectual classes trying to explain what kind of properties (primitives) are involved in them (cf. Dowty, 1979; Carlson, 1981; van Voorst, 1988; Smith, 1991; Verkuyl, 1993, 1999; Bertinetto, 2001; Rothstein, 2004 a.o.). In this subsection we will present the framework adopted in this paper, namely, Rothstein’s (2004) reinterpretation of Vendler’s aspectual classes of predicates.

1.1.1 Rothstein’s (2004) proposal: stages and telicity

According to Rothstein (2004), two properties underlie the four aspectual classes of predicates: telicity [\pm telic] and division in stages [\pm stage].

Rothstein (2004: 9) says that “what distinguishes atelic from telic predicates is what we may call formally S-cumulativity”; only atelic predicates have this property, which is defined as follows:

$$(8) \exists e \exists e' [X(e) \wedge X(e') \wedge \neg e \sqsubseteq e' \wedge \forall e \forall e' [X(e) \wedge X(e') \wedge R(e, e') \rightarrow X(\text{S}(e \sqcup e'))]]$$

“A predicate X is S-cumulative if any two distinct instances of X related by the ‘R’ relation can be summed, and the sum formed into a singular entity which is itself in the denotation of X.”³

S-cumulativity is the property which distinguishes between events like *eat three apples* and *run*. In the first case, one cannot put two events of eating three apples together to form a singular event of the same type, because it is not an S-cumulative event. If we do that, we will end up with an event of eating six apples. So telic events, like *eat three apples*, are not S-cumulative.

³ According to Rothstein (2004: 9) ‘R’ involves basically a temporal adjacency and the presence of the same arguments.

On the other hand, if we put two events of *running* together, we will obtain an event of *running*, because it has the property of S-cumulativity.

Another question concerns the difference between two atelic predicates such as *run* and *believe in a second life*. The notion of homogeneity can explain this difference: while *run* is homogeneous down to minimal parts, what means that it is formed by minimal events (*run* is formed by different steps, in different instants; a sum of them forms minimal parts which compose the running event), *believe in a second life* is homogeneous down to instants, because any moment of believing in a second life is equal to the whole event of believing in a second life.

The second property she discusses in order to explain Vendler's classes is the property of 'having stages', which is introduced in Rothstein (2004: 11) as the property of an event to appear in the progressive. If an event can appear in the progressive, it has stages. If it cannot, it does not have stages. We can understand this property as follows: an event has stages if it has different subevents which happen at different moments. But why is having or not having stages (appearing or not appearing in the progressive) important to characterize the Vendlerian classes?

Rothstein (2004: 11) claims that it is important because "a verb in the progressive asserts that an eventuality of a particular kind is 'in progress' or on going". This is natural to activities and accomplishments predicates but not to states and achievements: states are not grammatical in progressive because they are non-dynamic and do not have identifiable stages; achievements do not have stages due to the fact that they are events of instantaneous nature. Rothstein (2004: 12) shows that Landman (1992) considers the progressive as a way to present a *stage* of a given eventuality. In other words, there is a link between the property of having stages and the progressive form.

With these two notions, Rothstein proposes the following characterization of the four Vendlerian's aspectual classes:

(9) The features of the four aspectual classes: Rothstein's (2004) proposal

<i>States</i>	are atelic and do not have stages	[-telic, -stage]
<i>Activities</i>	are atelic and have stages	[-telic, +stage]
<i>Achievements</i>	are telic and do not have stages	[+telic, -stage]
<i>Accomplishments</i>	are telic and have stages	[+telic, +stage]

States are non-dynamic, cumulative and homogeneous down to instants, thus they do not entail change. So, *Peter hated Mary for 10 years* entails that at each shorter instant of this event *Peter hated Mary* was true.

Rothstein (2004: 15-16) presents some tests⁴ which allow us to identify stative predicates: (i) they do not usually occurs in the progressive (10a); (ii)

⁴ These tests are originally discussed in Vendler (1957/1967) and Dowty (1979).

In (14a), the question is about the duration of the event, i.e., how long the whole writing-a-letter event (its stages) lasted. On the other hand, (14b) asks about how long it took before the event happened. Both of them tell us about a change of state, which is considered in order to tell us about the duration of an event. The difference is that accomplishments have stages and they are composed by a sequence of activities and the question is about this sequence until the change of state. On the other hand, achievements are instantaneous, atomic events, without neither stages nor activities in their composition.

In this paper we will assume that S-cumulativity is the property that achievements do not have and that it is required by aspectual verbs when they select for a predicate. In the next section, we will investigate the semantic nature of bare plurals and singular quantized NPS in BP.

2. The semantic nature of NPs in Brazilian Portuguese: the bare plurals

In this section, we discuss bare plurals in BP. We will make our assumptions based on the semantic structure for nouns proposed by Rullmann & You (2006). Our goal is to show the difference between a bare plural and a singular NP and to explain why sentences composed by aspectual verbs followed by an achievement verb are ungrammatical in BP when the latter is followed by a singular NP, but are well-formed when it has as complement a bare plural NP.

BP allows an NP composed by a bare nominal (singular or plural) in object position. In (15), *livro* 'book' is a bare singular noun, because it appears without any overt determiner or classifier:

- (15) João comprou **livro**.
 John bought book-SG
 'John bought (one or more) books.'

Rullmann & You (2006) claim that the basic property of this kind of phrase (*livro* 'book') is that it has general number, i.e., it is neither singular nor plural, but it is neutral; it is not specified for number. In (15), the sentence can mean that John bought one or more books, as showed by our gloss.⁵

To explain the noun denotation of general number languages, Rullmann & You (2006) apply to number neutral NPs the semi-lattice structure proposed by Link (1983) for pluralities. This semi-lattice is an atomic domain represented by a set formed by singular and plural entities. With this structure, they defend that nouns with general number denote a set of singular and plural atoms, like we see in (16):

⁵ For more details about BP, see Schmitt & Munn (1999, 2002) and Müller (2001).

(16)

[[livro]] =		{a,b,c}	
	{a,b}	{a,c}	{a,c}
	a	b	c

So, if we assume that ‘a’, ‘b’ e ‘c’ are the only books in the world, in (16) the denotation of the noun *livro* is the set of all singular and plural entities.

According to Rullmann & You (2006: 179), having a general number does not mean having a complete absence of the number morphology. There are languages which have general number and plural marks, as showed in (17-18):

(17) Mari verseket olvas (Hungarian)
 Mary poems.PL.ACC read
 ‘Mary is reading poems.’

(18) Kitap-lar al-dı-m (Turkish)
 book-PL buy-PAST-1SG
 ‘I bought books.’

BP data confirm this hypothesis: it is a general number language (see 15) and has plural markers, as illustrated in (19):

(19) João comprou livros.
 John bought books.PL
 ‘John bought (two or more) books.’

According to Carson (2000), in sentences with bare plurals, the plural noun denotes a proper subset of the noun denotation which contains only pluralities, (or having all non-singular elements of this denotation). Therefore, Rullmann & You (2006) structure the non-marked denotation and the plural denotation of general number languages and number marks, as we see in (20):

(20)

	{a,b,c}		} PL } } General
{a,b}	{a,c}	{a,c}	
a	b	c	

In consequence, Rullmann & You (2006: 180) propose the following semantics to the plural morpheme:

- (21) $PL(N) = *N - At$
 where: $*N$ is the closure under union of N , and
 At is the set of atoms.

In (20) and (21) we see that a plural noun denotes only pluralities. However, besides the plural morphology, BP data show us that general number languages can also present singular morphology, as illustrated below. In (22), *moeda* ('coin') is inside a singular quantified phrase, and its interpretation is related to a specific coin.⁶

- (22) João comprou **a moeda**.
 John bought the coin
 'John bought the coin.'

According to Chierchia (1998), the singular form denotes a subset of the noun denotation which contains all singular members structures as follows:

- (23)
- | | | |
|-------|---------|-------|
| | {a,b,c} | |
| {a,b} | {a,c} | {a,c} |
| A | b | c |
- } SG } General

Considering the above facts and Rullmann & You's proposal, concerning the singular quantized phrase, we propose the following semantics to singular:

- (24) $SG(N) = *N - PL$
 where: $*N$ is a closet set under sum, and
 PL is the set of sums.

Considering the statements about noun denotations, we will assume to BP that bare singulars denote a set of all singular and plurals entities; bare plurals denote a set of only plural entities; and a non-bare singular NP denotes only a singular entity. Accordingly, we will expect that VPs whose V has a bare plural as complement (and bare singulars too, but they are not our main focus here) can entail more than one event. So, in (19), repeated below as (25), we can talk about one singular event of buying two or more books, or more than one buying book events, but which is expressed in the singular.

- (25) João comprou livros.
 John bought books.PL
 'John bought (two or more) books.'

⁶ We will not discuss the semantics of BP definite NPs in detail because it would take us too far afield.

In the second reading, we can say that there are different buying-events which we can be put together and form a singular buying-event: it is exactly what we have with activities predicates, showed in the previous section. Thus, in (25), there is a buying-book-event which is composed of minimal parts (subevents) of the same type (i.e. buying-book event). The possibility of having an event which entails a set of subevents of the same type is not possible with a quantized singular phrase, like (22), repeated below as (26):

- (26) João comprou a moeda.
 John bought the coin
 ‘John bought the coin.’

These facts guarantee us that bare plurals do change aspectual properties of the predicate, and this is crucial in sentences with aspectual verbs.

In the next section, we will take into account aspectual verbs and the predicates they usually select for.

3. Properties of selection of Brazilian Portuguese aspectual verbs

3.1 What are aspectual verbs?

Aspectuals are a class of verbs whose characteristic is to select for event-denoting predicates (Newmeyer, 1975; Freed, 1979; Lamiroy, 1987; Rochette, 1988, 1999). These predicates in BP generally appear in syntax as a non finite verbal projection (either a gerund or a prepositional infinitive), as we see below:

- (27) O menino começou [a comer a maçã].
 theboy began to eat-INF the apple
 ‘The boy began to eat the apple.’
- (28) O menino parou [de comer a maçã].
 theboy stopped of eat-INF the apple
 ‘The boy stopped eating the apple.’
- (29) O menino continua [comendo a maçã].
 theboy continues eat-GER the apple
 ‘The boy continues eating the apple.’

In (27) and (28) we see examples in which the aspectual selects for a prepositional infinitive as complement. When the aspectual is *começar* (‘to begin’) the preposition selected for is *a* and when the aspectual is *parar* (‘to

stop’) the preposition is *de*⁷. In (29) we have an example of selection of a gerund by aspectual *continuar* (‘to continue’)⁸.

Concerning their role in the sentence, these verbs can be classified either as aspectual operators (Oliveira, Cunha, Matos & Gonçalves, 2001; Oliveira, 2003; Oliveira, Cunha & Gonçalves, 2004) or aspectualizers (Verkuyl, 1999; Wachowicz, 2007). In all these cases what is focused on is their role in modifying or restricting the internal temporal structure of the eventualities they take as complements.

In terms of their semantics, we can say that aspectual verbs denote an individual stage of the internal temporal schema of an event: the starting point of a situation (27), its continuation (medial stage) (28) or its final portion (29).

That aspectual verbs denote some parts of a situation can be easily explained by the fact that these verbs still have lexical content, and this content relates to those stages/phases of events. If aspectual verbs can denote a specific part of the temporal schema of their complement, a question is to know how the nature of this complement is. It is the topic of the next section.

3.1.2 On the nature of the complement selected by aspectual verbs: syntax and semantics

We have just said that aspectual verbs select for predicate denoting events as their complements and these complements are realized as a non-finite verbal projection. Our task is to investigate what is inside this non-finite projection.

We will start proposing that the complement selected by an aspectual is a complex constituent which minimally contains a verb and its arguments (including the external one): it is a VP⁹. The prediction of this proposal is that the grammaticality of a sentence with an aspectual verb will depend on the combination of features of the aspectual with the features of the entire VP complement. Let us see how this hypothesis works with the examples below:

- (30) a. Começou a / parou de chover.
 began to / stopped of rain- INF
 ‘It began to rain / it stopped raining.’

⁷ We will not go into the nature of these prepositions that introduce infinitives. Their status is a matter of debate and there are various proposals in the literature both in relation to their function and concerning their syntactic category. For relevant discussion, see Rochette (1988, 1999), Kayne (2000, 2004), Raposo (1989), Gonçalves (1996), Corso (2002), Boff (2004), and Oliveira, Cunha & Gonçalves (2004).

⁸ In European Portuguese, *continuar* selects for a prepositional infinitive headed by *a*.

⁹ For our purposes, it is enough to say that aspectuals select for a VP. It is a kind of ‘minimal structural analysis’. See Gonçalves (1996) and Lunguinho (2005), for a more sophisticated analysis of the syntax of these verbs.

- b. Continua chovendo.
 continues rain-GER
 ‘It continues raining.’

Following this analysis, we could say that examples in (30) are grammatical due to the fact that the properties of selection of aspectuals are compatible with the properties of VP [*chover*]. But, as it stands, this affirmation is too vague. What properties must a VP have for the sentence resultant from its combination with an aspectual to be grammatical? We will look at some examples to understand what these properties are.

Based on its lexical semantics, we can say that *começar* (‘to begin’) focuses on the initial stage of an event. Thus, a sentence with *começar* is grammatical if and only if the VP complement of this verb denotes an event characterized by the presence of stages. We will make this verb be complemented by predicates of four Vendlerian classes:

- (31) a. O garoto começou a desenhar um círculo.
 the boy began to draw-INF a circle
 ‘The boy began to draw a circle.’
- b. O menino começou a brincar.
 the boy began to play-INF
 ‘The boy began to play.’
- c. *O convidado começou a chegar.
 the guest began to arrive-INF
 ‘The guest began to arrive.’
- d. *Os alunos começaram a saber francês.
 the students began to know-INF French
 ‘The students began to know French.’

In the grammatical sentences, *começar* has as complement an accomplishment VP (31a) and an activity VP (31b). On the other hand, in the ungrammatical sentences it is complemented by an achievement VP (31c) and a state VP (31d). What do the VPs in (31a-b) have in common that the ones in (31c-d) do not have? Turning to Rothstein’s reinterpretation of Vendlerian classes in (9) we have the answer: accomplishments and activities are events which have stages and states and achievements do not have this feature. Based on this, we can conclude that the hypothesis formulated in relation to *começar* is right: this verb selects for VPs with the feature [+stage].

Now we will look at the complementation of *continuar*:

- (32) a. O garoto continua desenhando um círculo.
 the boy continues draw-GER a circle
 ‘The boy continues drawing a circle.’
- b. O menino continuou brincando.
 the boy continued play-GER
 ‘The boy continued playing.’
- c. *O convidado continua chegando.
 the guest continues arrive-GER
 ‘The guest continues arriving.’
- d. #Os alunos continuam sabendo francês.
 the students continue know-GER French
 ‘The students continue knowing French.’

We have the same situation as we had with *começar*. From this we can conclude that *continuar* also selects as complement VPs with the feature [+stage]. Its lexical semantics says us that *continuar* marks the continuation of an event and as such only predicates that are able to show progression are possible candidates to be in the complement position of this verb, namely, activities and accomplishments.

We can see from the examples below that the selection of *parar* (‘to stop’) is similar to that of *começar* and *continuar*: it selects for VPs with the feature [+stage]:

- (33) a. O garoto parou de desenhar um círculo.
 the boy stopped of draw-INF a circle
 ‘The boy stopped drawing a circle.’
- b. O menino parou de brincar.
 the boy stopped of play-INF
 ‘The boy stopped playing.’
- c. *O convidado parou de chegar.
 the guest stopped of arrive-INF
 ‘The guest stopped arriving.’
- d. *Os alunos pararam de saber francês.
 the students stopped of know-INF French
 ‘The students stopped knowing French.’

Now one question: Do all aspectual verbs select for predicates whose structure of features includes the [+stage] property?

It is not the case that all aspectual verbs select for [+stage] predicates. Take the case of *terminar* ‘to finish’:

- (34) a. O garoto terminou de desenhar um círculo.
 the boy finished of draw-INF a circle
 ‘The boy finished drawing a circle.’
- b. #O menino terminou de brincar.
 the boy finished of play-INF
 ‘The boy finished playing.’
- c. *O convidado terminou de chegar.
 the guest finished of arrive-INF
 ‘The guest finished arriving.’
- d. *Os alunos terminaram de saber francês.
 the students finished of know-INF French
 ‘The students finished knowing French.’

Looking at the above data, we see that *terminar* selects for predicates that have both stages *and* telicity. From the aspectual classes, only one fulfills these requirements: accomplishments (34a)¹⁰.

Based on these facts, we propose the following characterization of the class of aspectual verbs:

(35) **Features of aspectual verbs**

- a) they are verbs with lexical content relative to stages of an event;
- b) they select for a VP complement and
- c) they impose selectional constraints on the aspectual nature of the VP complement:
 - c₁) *começar*, *continuar* and *parar* select for a [+stage] VP and
 - c₂) *terminar* selects for a [+telic, +stage] VP

In this section, we showed that aspectual verbs select for VPs whose features include [+stage]. In the next section, we explain why a VP like *recolher a moeda* (‘to catch the coin’) cannot be selected by aspectual verbs, but a VP like *recolher moedas* (‘to catch coins’) can be.

¹⁰ Interestingly, the same conclusion was reached at by da Cruz (1995) in relation to the aspectual use of *fó* and *vò* (to finish) in Fongbè.

4. The interaction between aspectual verbs and achievement verbs

This section explains the interaction between aspectual verbs and VPs headed by achievement verbs. We have seen that achievements are atomic events and this atomicity is preserved by singular quantized phrases (36a); thus, achievements need to be pluralized by their relation with other kinds of NPs, in our case bare plurals (36b). After that, the VP becomes an S-cumulative predicate, which has stages and can be S-summed, like activities.

- (36) a. João começou a recolher a moeda.
 John began to catch-INF the coin
 ‘John began to catch the coin.’
 b. João começou a recolher moedas.
 John began to catch-INF coins
 ‘John began to catch coins.’

Based on the section 3, we can say that aspectual verbs select for [+stage] predicates. Accordingly, we must assume that *recolher moedas* (‘to catch coins’) is a [+stage] predicate, but *recolher a moeda* (‘to catch the coin’) is not. Since both of these sentences have a [-stage] verb (*recolher*, an achievement), we are led to conclude that the denotation of the NP in the complement position of this verb can change the feature of the whole VP.

In the section 1, we showed that achievements do not have stages because they are instantaneous, atomic events; on the other hand, activities have stages and are S-cumulative predicates. In the section 2, we showed that a singular quantized phrase, like *a moeda*, in (36a), denotes only a singular entity; and a bare plural, like *moedas*, in (36b), denotes plural entities.

So, we assume that singular quantized phrases cannot change the VP feature from [-stage] to [+stage] because the singular entity cannot be distributed to obtain several events; then, we have only one instantaneous, atomic event. On the other hand, bare plurals can change the feature of VP from [-stage] to [+stage] because the plural entities can be distributed and the result is a reading of several events. This is schematically presented below:

- (37)
- a. VP: V_{achievement} + NP_{singular quantized}
- b. VP: V_{achievement} + NP_{bare plural}
- VP [-stage]

┌──────────┴──────────

V NP

achievement singular entity

[-stage]

VP [+stage]

┌──────────┴──────────

V NP

achievement plural entities

[-stage]

In the section 2, we pointed out that two S-cumulative predicates like *dancing* (an activity) can be put together in order to form a singular *dancing* event with the same properties (cf. Rothstein 2004). We also said that one cannot sum an achievement predicate like *catching the coin* and obtain, as a result, a singular predicate of the same type. Rather, in this case, we would have a predicate like *catching some coins*.

Thus, we argue that sentences like (36a) have non-S-cumulative predicates. On the other hand, sentences like (36b) have a S-cumulative predicate: *recolher moedas* ('to catch coins') is composed by subevents (stages) of the same type (each *catching-coin* event is a subevent of *catching-coins* event). Thus, (36b) has a S-cumulative predicate whose stages can be identifiable (each *catching-coin* event) and S-summed, unlike a non-cumulative predicate like (36a). We take the cumulative definition, repeated below (38a), to show formally what happens in (36b) – and showed by (38b):

- (38) a. $\exists e \exists e' [X(e) \wedge X(e') \wedge \neg e \sqsubseteq e' \wedge \forall e \forall e' [X(e) \wedge X(e') \wedge R(e, e') \rightarrow X(\overset{s}{e \sqcup e'})]]$
- b. $\exists e \exists e' [\text{CATCHING-COINS}(e) \wedge \text{CATCHING COINS}(e') \wedge \neg e \sqsubseteq e' \wedge \forall e \forall e' [\text{CATCHING COINS}(e) \wedge \text{CATCHING COINS}(e') \wedge R(e, e') \rightarrow \text{CATCHING-COINS}(\overset{s}{e \sqcup e'})]]$

(38a) tells us that we can take events of the same type (X), with a Relation (R) between them and form a singular s-summed event ($\overset{s}{e \sqcup e'}$). It is what we see in (38b): we have events of the same type (*catching-coins* events), with a Relation R (the same participants) and we formed a singular s-summed event.

Since we have explained the differences between (36a) and (36b), and also how stages are formed in (36b), we can see the results of the interaction of these predicates with different aspectual verbs. We will show how *continuar* ('to continue') and *parar* ('to stop') work, but we will not discuss *terminar* ('to finish') for a simple reason: as we saw, this aspectual verb selects only for accomplishments and we do not have an accomplishment predicate neither in (36a), nor in (36b). Observe the following examples:

- (39) a. João continuou recolhendo moedas.
John continued catching-GER coins
'John continued catching coins.'
- b. João parou de recolher moedas.
John stopped of catch-INF coins
'John stopped catching coins.'

The sentences in (39) behave like (36b), i.e., the predicate *recolher moedas* is cumulative and have stages; consequently, it is selected for both

continuar and *parar*. As predicted, sentences with a predicate like *recolher a moeda* are not grammatical with both *continuar* (40a) and *parar* (40b).

- (40) a. #João continuou recolhendo a moeda.
 John continued catching-GER the coin
 ‘John continued catching the coin.’
- b. #João parou de recolher a moeda.
 John stopped of catch-INF the coin
 ‘John stopped catching the coin.’

In all cases above, we have sentences whose complement of aspectual verbs is an achievement verb followed by a singular quantized NP or a bare plural. When the complement is a singular quantized NP the predicates cannot be combined with aspectual verbs. On the other hand, when we have an achievement verb and a bare plural, the combination of aspectual verbs and these predicates results in grammatical sentences:

- (41) Ana começou a / parou de quebrar #o copo / copos.
 Ann began to / stopped of break-INF the glass / glasses
 ‘Ann began to break / stopped breaking the glass / glasses.’
- (42) Ana continuou quebrando #o copo / copos.
 Ann continued breaking-GER the glass / glasses
 ‘Ann continued breaking the glass / glasses.’
- (43) Pedro começou a / parou de atirar #a bola / bolas.
 Peter began to / stopped of throw-INF the ball / balls
 ‘Peter began to throw / stopped throwing the ball / balls.’
- (44) Pedro continuou atirando #a bola / bolas.
 Peter continued throwing-GER the bola / balls
 ‘Peter continued throwing the ball / balls.’
- (45) João começou a / parou de comprar #a figurinha / figurinhas.
 John began to / stopped of buy-INF #the card / cards
 ‘John began to buy / stopped buying the card / cards.’
- (46) João continuou comprando #a figurinha / figurinhas.
 John continued buying-GER the card / cards
 ‘John continued buying the card / cards.’

Looking at the above examples, we confirm that in BP aspectual verbs can select for sentences with VPs headed by achievement verbs when the

complement of these verbs is a bare plural. These predicates are s-cumulative, like activities, what guarantees that they have stages. An important fact that can confirm our statement is that these predicates can be modified by a *for*-phrase. This phrase, according to Landman & Rothstein (2009), modifies only homogeneous predicates (s-cumulative, in Rothstein 2004).

- (47) a. Maria quebrou copos por 10 minutos.
 Mary broke glasses for 10 minutes
 ‘Mary broke glasses for 10 minutes.’
- b. Pedro atirou bolas por 15 minutos.
 Peter threw balls for 15 minutes
 ‘Peter threw balls for 15 minutes.’

In this section, we applied the hypotheses made in the previous sections in order to explain the BP data we were dealing with. In the final section, we will present our conclusions and a briefly discussion about bare singulars.

5. Conclusions and further questions

In the present paper, we discussed the interaction between aspectual verbs and predicates headed by achievements predicates. We showed that aspectual verbs like *começar*, *continuar* and *parar* select for predicates with the [+stage] feature. Secondly, we showed that bare plurals can change the aspectual structure of VP headed by achievements: they allow that the predicate can be read as [+stage]. Accordingly, aspectual verbs can appear in sentences with achievements predicates complemented by bare plurals.

Moreover, in section 2, we showed that bare singulars in BP denote both singular and plural entities. Then, we expect that bare singulars can also trigger the same consequences in the contexts we have been discussing here.

- (48) a. Pedro começou a / parou de quebrar copo.
 Peter began to / stopped of break-INF glass
 ‘Peter began to break / stopped breaking glasses.’
- b. Pedro continuou quebrando copo.
 Peter continued breaking-GER glass
 ‘Peter continued breaking glasses.’

In (48), all VPs with achievements whose complement is a bare singular can be combined with aspectual verbs. So, we believe that at least in complement position bare singulars are equivalent to bare plurals in BP.

Despite this similarity, we would like to point out a difference between bare singulars and bare plurals: only bare plurals can appear as preverbal

subjects in sentences composed by an aspectual and an achievement verb (49). In post-verbal position, the contrast disappears (50):

- (49) a. Convidados começaram a / pararam de chegar.
 Guests began to / stopped of arrive-INF
 ‘Guests began to arrive / stopped arriving.’
- b. #Convidado começou a / parou de chegar.
 Guest began to / stopped of arrive-INF
 ‘Guest began to arrive / stopped arriving.’
- (50) a. Começaram a / pararam de chegar convidados.
 Began to / stopped of arrive-INF guests
 ‘Guests began to arrive / stopped arriving.’
- b. Começou a / parou de chegar convidado.
 Began to / stopped of arrive-INF guest
 ‘Guest began to arrive.’

These examples show that bare singulars and bare plurals do not have the same distribution in BP. In fact, bare singulars in BP deserve a more accurate investigation that must take into account the interface between syntax and semantics. Unfortunately, we leave this investigation for future research.¹¹

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¹¹ Important works discussing bare singulars in BP have appeared in the literature. For relevant discussion, see Schmitt & Munn (1999, 2002), Müller (2001), Müller & Oliveira (2004), Munn & Schmitt (2005), Paraguassu-Martins & Müller (2007), Santolin (2006) and Taveira da Cruz (2008).

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