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DELTA

Articles

Semelfactives as atomic predicates

Semelfactivos como predicados atômicos

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ABSTRACT

The goal of this paper is to provide evidence in favour of the hypothesis that, regarding their internal temporal structure, semelfactive and achievement predicates are alike (i.e., both are atomic). In order to do so, I will study the readings these predicates obtain in two different contexts: when they are modified by for-phrases and when they combine with a progressive operator. The conclusion will be that when combined with elements that operate over intervals, semelfactives trigger a special reading (the iterative one), because these elements cannot operate within their internal temporal structure.

Keyword: *atomic predicates; semelfactives; achievements.*

RESUMO

O objetivo central deste trabalho é oferecer evidências a favor da hipótese de que, quanto à sua estrutura temporal interna, semelfativos e

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culminações são equivalentes (i.e., ambos são atômicos). Para isso, vamos estudar as interpretações destes predicados em dois contextos diferentes: quando eles são modificados por frases temporais durativas como "por x tempo" e quando eles se combinam com o operador progressivo. Nossa conclusão é que quando os semelfativos se combinam com elementos que operam sobre intervalos, eles disparam uma interpretação especial (a iterativa), porque esses elementos não podem operar dentro da sua estrutura temporal interna.

Palavras-chave: *predicados atômicos; semelfactivos; culminações.*

1. Introduction

Within the study of *Aktionsart* (i.e., inherent temporal structure of predicates), the most popular proposal, Vendler (1967), states that predicates can be divided into four classes on terms of their temporal structure (*time schemata*): states, activities, accomplishments and achievements. Vendler, and subsequent bibliography, recognizes three temporal properties that distinguish them: dynamicity (or stages), telicity and duration. Among them, telicity and duration are the two relevant for this paper.

Telic predicates are those which have a natural end point, that is to say, they cannot hold indefinitely. Accomplishments (1) and achievements (2) present this property, since none of these predicates express events that can hold on indefinitely. Much of the literature derives the telicity property from the possibility of the predicate suffering a change of state[3]. As for the other property, durative predicates are those which last in time, that is to say, they are not instantaneous. Hence, within the set of telic predicates, accomplishments are different from achievements in that they describe durative events.

Accomplishment (telic and durative)

(1) a. Mary ate a sandwich.
b. Mary read a book.

3. This is not the only way to understand telicity, as we will show in section 2.

Achievement (telic and non durative)

(2) a. Mary died.
b. Mary arrived.

Smith (1991) is the first one to focus on a class of predicates that does not seem to fit in Vendler's classification: the semelfactive predicates (3).

Semelfactives

(3) a. Mary coughed.
b. Mary blinked.
c. Mary jumped.

Semelfactives seem to be predicates without duration that cannot keep going indefinitely (i.e., they are *inherently bounded*, as Smith points out). However, they do not seem to be telic given that they do not suffer a change of state.

A peculiarity of these predicates is the fact that they can describe two kinds of events. On the one hand, sentences like (3) can describe events where Mary coughed once, blinked once and jumped once (Smith, 1991; Rothstein, 2004; Nelson, 2018). This is their actual semelfactive interpretation[4] since they describe a single event. On the other hand, semelfactives can describe situations where more than one event of *P* takes place. This reading becomes more explicit if the predicate is modified by a temporal adjunct, as we can see in (4)[5].

(4) a. Mary coughed for 10 minutes.
b. Mary blinked for 10 minutes.
c. Mary jumped for 10 minutes.

4. Smith (1991) points out that "the term 'semelfactive' comes from the Latin semel (once), used in Slavic linguistics to refer to a suffix which indicates a single event" (Smith, 1991:29).
5. The fact that the multiple event reading is achieved with temporal adjuncts is also observed by, inter alia, Smith (1991) and Nelson (2018).

In (4) the only possible interpretation is the one in which there is more than one event of coughing, blinking or jumping (i.e., the sentence describes an unlimited amount of P events).

Given the fact that semelfactives can express two kinds of situations (i.e., the single event one and the multiple event one) there has not been much consensus on how to account for their semantic nature. While some part of the literature focus on the single event interpretation and derives the multiple event interpretation as a result of an operation, the other part of the literature focus on the multiple event interpretation, leaving the single event interpretation as result of a further operation. One of the most spread proposals of the former group is Smith (1991). In focusing on the single event reading, Smith (1991) claims that semelfactives share properties with achievements but differ from them in that they are not telic. On the other hand, the main proposal of the later group is Rothstein (2004, 2008). In considering their multiple event reading, she claims that semelfactives are like activities but differ from them in having the minimal set of atomic entities lexically accessible.

Subsequent bibliography (e.g., Katalin, 2011; Nelson, 2018) has offered arguments in favor of one of these two proposals. In this sense, the ideas presented in this paper, as I will claim below, aims to show evidences in favour of Smith's proposals. In general terms this paper is aligned to Smith's ideas in considering semelfactives to be *like* achievements. However, contrary to her model, I claim that semelfactives and achievements *are the same* regarding their temporal structure (i.e., their Aktionsart). Before presenting the main goals of this paper, I will present briefly Smith and Rothstein's proposals.

Smith (1991) states that semelfactives should be considered a fifth aspectual class since they present a set of semantic features that distinguish them from the other four classes. More specifically, in her model, the aspectual classes (*situations types*, as she calls them) are defined by a set of temporal features: [+/- static], [+/- durative] and [+/- telic]. For instance, accomplishments and achievements are composed of the following set of features:

(5) a. Accomplishments: [- static], [+ telic] and [+ durative]
b. Achievements: [- static], [+ telic] and [- durative]

Semelfactives, in turn, are similar to achievements since they are [-static] and [-durative], but differ from them in being [-telic].

(6) Semelfactives: [- static], [- telic] and [- durative]

Therefore, according to Smith, sentences like (7-8) describe instantaneous events (they both describe *single-stage events*, Smith; 1991: 29).

(7) Mary jumped (once)[6].
(8) Mary arrived.

According to this model, the difference between them is the property of telicity. As telicity depends on the object suffering a change-of-state, only achievements are atelic. Semelfactives, on the other hand, are *inherently bounded* since they are single-stage events, but they are not telic. At this point it is worth mentioning that it is the change of state on the object what defines telicity. I will return to this idea in section 2 and I will present arguments in favour of the hypothesis that there is no necessary relationship between change of state and telicity.

Another interesting observation of Smith's proposal has to do with the multiple-event reading of Semelfactives. As she claims, along with the *situations types*, determined by the verb constellation (i.e., verb plus complements), some syntactic context allows for *derived situations types*, which are "the result of situation type shifts" (Smith; 1991: 18)[7]. Hence, achievements and semelfactives can describe a different situation type under certain circumstances and behave alike: they both describe a situation with the following properties: [- static], [- telic] and [+ durative] (i.e., an *activity situation*).

(9) Mary jumped for half an hour.
(10) People arrived for half an hour.

6. The adjunct "once" appears in order to discard the multiple-event reading. Nevertheless, "once" does not need to appear for a sentence like (7) to have the semelfactive interpretation.
7. As noticed by an anonymous reviewer, the idea of type shifting is not treated in the same way across the literature of aspectuality and Aktionsart. While some proposals, like the one presented here, consider temporal adjuncts to be type shift operators, other proposals have a restricted notion of type shifting.

In contrast, Rothstein (2004, 2008) states that semelfactive predicates are not instantaneous, as claimed by Smith. She points out that, unlike achievements which have an instantaneous structure (i.e., no P → P), semelfactives have an internal structure since they involve a set of movements which are constitutive parts of the event. For instance, "kick the door" involves not only the kick itself, but also the movement of the leg to the door. Given that there is movement, there should be two different instants at least. Consequently, in this model, semelfactives are not related to achievements, but to activities (12).

(11) Mary kicked the door for an hour.
(12) Mary and John waltzed for an hour.

Following Dowty (1979), Rothstein claims that activities have minimal parts which are the smallest event that counts as events of that predicate. For instance, an activity such as "waltzing" denotes a set of events of waltzing and contains a subset of minimal waltzing events[8]. While in activities this subset of minimal events of P is not easily accessible[9], in semelfactives the minimal set of entities is lexically accessible. Therefore, in this proposal, activities and semelfactives are alike. They just differ in having the minimal set of atomic entities lexically accessible. It is worth noting that this analysis focuses on the multiple-event reading of semelfactives. That is to say, multiple-event readings of semelfactives (but not single-event readings) pattern with activities in having minimal parts which are the smallest event that counts as events of that predicate.

In sum, even though neither of these proposals considers semelfactives to pattern with achievements (i.e., Smith claims that they are not telic and Rothstein states that they are not instantaneous),

8. Rothstein claims that, for instances, in "waltzing", the minimal part that count as an event of waltzing would be composed of three steps. None of the parts of that minimal part count as the event of waltzing.
9. Rothstein (2004) claims that the way we can obtain those subsets of minimal events of P is through an atomic function. This function gets the minimal predicate P_{min} which is a set of overlapped and singular entities (i.e., non-atomic). Therefore, this function takes a waltzing predicate, for instance, and returns the minimal set of singular entities (a portion of three steps that counts a waltzing). If this function is applied to a semelfactive, which has the minimal set of entities lexically accessible, the atomic function will return the minimal set of atomic and non-overlapped entities (i.e., one of the events of P).

according to Smith's analysis semelfactives and achievements are quite similar: they both denote single-stage events and shift to activities under certain circumstances. Rothstein, in turn, claims that semelfactives are not like achievements since the former do have an internal structure.

As said above, the main goal of this paper is to provide evidence in favour of the hypothesis that semelfactives and achievements are alike regarding their internal temporal structure. In this sense, the ideas of this paper follow Smith's proposal, who was the first one in noticing the similarity between these aspectual classes. However, unlike her analysis, I claim that semelfactives are telic predicates. As this is not the main purpose of this paper, I briefly present this discussion in section 2. In turn, the main goal is to discuss Rothstein's idea about semelfactives having internal structure. As said before, this paper intends to provide arguments in favour of the thesis that semelfactives do not have internal structure. In order to do that, I will explore the way these predicates behave when operators and temporal phrases tries to operates inside their internal structure. As it will be shown in the next sections, in those contexts semelfactives trigger an iterative reading (i.e., the multiple-event reading observed by Smith). My main claim is that this is exactly what happens with predicates without internal structure, i.e., achievements. Therefore, in section 3 I will compare the behavior of achievements and semelfactives.

Before presenting my proposal and providing evidence in favour of the thesis defended here, it is necessary to make one clarification about the data presented. As in Smith (1991), the main interest of this paper is the nature of single-event reading of semelfactives. That is to say, my main goal is to account for sentences with the actual semelfactive interpretation. As for the multiple-event readings, I claim that they are obtained by further operations, as claimed in Smith. I will return to these ideas in section 2.

2. The proposal: semelfactives as atomic and telic predicates

In this section, I will present my proposal regarding semelfactive predicates. As we will see, the proposal presented here is different from

Rothstein (2004, 2008) in considering these predicates without internal temporal structure. I will follow the general idea of Smith about the similarity between semelfactives and achievements, but I will claim, instead, that semelfactives are just like achievements with respect to their internal structure.

The section is organized as follows. Firstly, I will briefly discuss the notion of telicity Smith assumes and I will present a different definition of telicity which does not depend on the idea of change of state. As this is not the central issue of this paper, I will just briefly present the discussion about these notions in order to make clear why, in my proposal, semelfactive predicates are telic. Secondly, I will present the main claim of this paper; i.e., that these predicates are atomic. I will briefly present some arguments against Rothstein's idea of semelfactives and in the next section I will present evidence in favour of the hypothesis that, regarding their internal temporal structure, achievements and semelfactives behave linguistically alike.

As I have mentioned in the previous section, Smith (1991) states that semelfactives are different from achievements because they are not telic, and they are not telic because they do not suffer a change of state. Precisely, according to Smith, telicity depends on a change of state that provides a final point to the eventuality. Hence, since semelfactives do not suffer a change of state, they are not telic. In this part of the section, I will focus on this association between telicity and change of state, and I will provide arguments against it.

Let us suppose that the property of being telic is actually connected to the possibility of suffering a change of state. First of all, it is interesting to notice that, in such a case, we would be assuming that the final point is motivated by non-temporal properties. That is to say, the final point would depend on a condition of one of the arguments of the verb: whether it is able to suffer a change of state (or not). Even if we want to assume that, there are some counterexamples against this association that show the problems this notion arises.

Most telic events have arguments which, indeed, suffer a change of state:

(13) Mary ate a pizza. *accomplishment*
(14) Mary arrived. *achievement*

Sentences such as (13) and (14) have arguments which suffer a change of state that do not allow them to continue indefinitely. In (13) the argument "a pizza" suffers a change of state, and it is the consumption of the pizza what does not allow the eventuality to keep going. In (14) the argument "Mary" suffers a change of location, and it is the new location of the argument what does not allow the eventuality to keep going.

However, this property is not common to all telic predicates. In (15) it is not completely clear what kind of change of state makes the predicate telic[10].

(15) a. Mary read a book. *accomplishment*
b. Mary won the lottery. *achievement*
c. Mary found the book. *achievement*

Thus, even though the idea of a final point motivated by a change of state seems intuitive, it does not seem correct considering examples such as (15). In this sense, if telicity cannot be defined by the idea of change of state, one of the strongest arguments against the telicity of semelfactives is overthrown.

Instead of that definition of telicity, in this paper I assume the idea of telicity presented in Krifka (1992), Bach (1986) and Borik (2006), among others: telicity is derived from the property of the predicate of being non-homogeneous. More specifically, I follow Borik's definition of telicity[11]:

10. At this point it is important to make a clarification regarding aspectual meaning. As observed by Verkuyl (1972), aspectual meaning is compositional in the sense that it depends on the meaning of both the predicate and its arguments. In particular, the internal argument (objects of transitives such as "I ate *sandwiches"* and subjects of inacusatives such as "*people* arrived") is relevant in order to compute the aspectual meaning. This is why it is widespread in the literature on aspect to observe the properties of the internal argument (e.g., Dowty, 1979; Tenny, 1994; Borer, 2004). One anonymous reviewer observed that in cases like (15) we could claim that it is the subject of the sentence what has suffered a change of state: for instance, in (a) the result of Mary reading the book would be that Mary knows the content of the book. However, if that were the case, atelic sentences such as "Mary walked by the street" should also be interpreted as telic since Mary has also changed (at least, her position).
11. It is worth noting that Borik (2006) present further theoretical and empirical arguments in order to arrive to the same conclusion, that is, that the relation between telicity and end point should be revisited.

(16) Telicity:

"A predicate P is telic if for all I, x_1, x_2, ..x_n such that P(x_1, x_2, ..x_n,I) ∀ I' ⊆ I [P(x_1, x_2, ..x_n,I') → I'=I]".

[Borik, 2006:55]

In other words, for each interval *i* such as the predicate *P(x)* takes place at *i, P(x)* is telic if and only if there is no interval *i'* included in *i* at which *P(x)* takes place. Then, a predicate is telic if it does not contain a part of itself that it is the predicate itself.

Therefore, given this definition, it can be stated that achievements as well as semelfactives have the property of being telic. In (17) "arrive" is a telic predicate since there is no *i'* included in *i* at which "arrive" takes place. In (18) "jump" is a telic predicate since there is no *i'* included in *i* at which "jump" takes place.

(17) Mary arrived.
(18) Mary jumped (once).

It is worth mentioning that by stating that these predicates are telic I mean that they are inherently telic. That is to say, predicates such as (17-18) have in their denotation the property of being telic (being *telic* the definition given above).

(19) [[arrive]] = λe. arrive (e) ∧ Telic (e)
(20) [[jump]] = λe. jump (e) ∧ Telic (e)

This is what distinguishes them from accomplishments, which are not inherently telic (i.e., they obtain the telicity property in a compositional way, by combining the semantics of the predicates and the semantics of the object[12]).

The other statement I make in this paper has to do with the internal structure of the semelfactives. Unlike Rothstein I claim that these predicates do not have internal temporal structure. Before presenting

12. In Trebisacce (2018) there is an explicit model of how accomplishments obtain this property in the syntax and how it is computed on the Logical Form.

evidence in favour of the hypothesis defended here –which is the main purpose of this paper- I will briefly discuss Rothstein's idea about semelfactives. As I have said in section 1, Rothstein states that semelfactives are not instantaneous because they involve different movements that are part of the denotation of the predicate. That is why these predicates, according to her, have internal structure. Therefore, as I have mentioned before, a semelfactive such as "kick the door" should involve not only the kick itself, but also the movement of the leg to the door.

In first place, it is not completely clear why an achievement like "touch the table" would be instantaneous, while a semelfactive would not, as stated by Rothstein. She says that this is so because the assertion "I touched the table" is not true until the right moment the fingers actually touch the table (i.e., the movement of the finger toward the table are not included in the denotation of the predicate). However, the assertion "I kicked the door" finds the same truth conditions: if I move my leg in direction of the door it is not clear if I will kick the door until the right moment I actually kick it. The same happens with a semelfactive such as "jump": even if the event of jumping involved a set of movements, the assertion "I jumped" will be true just in case the agent has reach the floor again.

In second place, even if these predicates (both of them: "touch the table" and "kick the door") involve different movements, I claim that they behave linguistically as atomic predicates (i.e., without internal structure). This statement follows from the evidence that will be presented in the next sections. I will show that when these predicates are modified by elements which try to operate within their internal temporal structure, they trigger special readings, namely, an iterative one, a stative one. Hence, what it will be concluded is that in neither of both cases (i.e., achievements and semelfactives) it is possible to get inside their internal temporal structure. As this is the main claim of this paper, I will present some evidence of this observation in the following section.

3. Evidence

In this section, I will provide arguments in favour of the hypothesis I defend in this paper: regarding their temporal structure, semelfactives behave as achievements (i.e., they are atomic predicates). I will provide evidence supported by two similar constructions: whenever an element tries to operate within the temporal structure of these predicates, they present a special reading (i.e., they do not denote a unique event of P). Thus, in the next two subsections I will present how these predicates behave when combined with for-phrases and with the progressive operator.

3.1. For-phrases

In this subsection we will study the combination of "for-phrases" with achievements and semelfactives. We will see that since these phrases operate over subinterval they cannot be combined with achievements. If this happens, given their lack of internal structure, they give rise to different kinds of interpretations depending on the encyclopedic meaning of the predicate: inter alia, they can iterate the event conforming an event with internal structure or they can quantify over a resultant state. I claim that the similarity between achievements and semelfactives can be hold considering the behavior of semelfactives in the same contexts. Like achievements, when for-phrases try to operate within the internal structure of semelfactives, they iterate the event, giving rise to the multiple-event reading observed by Smith.

Dowty (1979) claims that for-phrases are universal quantifiers which operate over subintervals. In this sense, these phrases select predicates that satisfy the subinterval property, which is defined in the following way:

> (21) Subinterval Property: Subinterval verb phrases have the property that if they are the main verb phrase of a sentence which is true at some interval of time I, then the sentence is true at every subinterval of I including every moment of time in I.
>
> [Bennett & Partee, 1978:72]

In other words, a sentence which is true at some interval should be true at all subintervals of that interval. Stative and activity predicates

have this property given that the truth condition of the sentence at any interval *i* implies the truth condition of the sentence at all subinterval *i'* of *i*. For instance, if "love Peter" is true at some interval *i*, it is also true at all subintervals *i'* which are included in *i*.

(22) Mary loved Peter.
(23) Mary ran.

Since these predicates have the subinterval property, they can be universally quantified by for-phrases, as shown in (24-25).

(24) Mary loved Peter for 3 years.
(25) Mary ran for 30 minutes.

Therefore, for-phrases are functions which evaluate the truth condition of the predicates at all subintervals of the interval denoted by the phrase (e.g., 3 years in (24) and 30 minutes in (25)). More concretely, for-phrases take set of events and give back a truth condition 1 (true) if and only if for all subintervals *i'* included in *i* we can state that event.

(26) [[for 3 years]]= $\lambda e.\exists t$ (3 years (t) & $\forall t'(t' \mathcal{P} t \rightarrow \exists e$ (love Peter(e, Mary) & at (e,t'))

The same happens with activity predicates, such as (27): the denotation "for 30 minutes" is the set of events of "run(Mary)", which lasts 30 minutes.

(27) Mary ran for 30 minutes.

Accomplishments and achievements do not have the subinterval property, as the truth of the sentence at some interval does not imply the truth of the sentence at all subintervals of that interval. For instance, if "Mary write a book" is true at an interval *i*, it is not necessarily true at all subintervals *i'* included in that interval *i*. In fact, we can state that it is not true at all, since what Mary was writing at each subinterval was not a book, but different parts of that book.

(28) Mary wrote a book.

Regarding achievements, such as "arrive", they do not have the subinterval property because they do not have an internal temporal structure. As it has been claimed (e.g., Rothstein, 2004) and I have claimed before, they are atomic predicates.

(29) Mary arrived.

Given that they do not have the subinterval property, they cannot be combined with for-phrases:

(30) #Mary wrote an e-mail for an hour.
(31) #Mary arrived for an hour.

In both cases, the fact that these predicates do not have the subinterval property does not allow for-phrases to universally quantify over intervals; that is, in (30) and (31) it is not true that for all subintervals *i'* included in the interval *i* "of an hour" there exists the event denoted by the predicate. However, even if they behave in a similar way by not allowing for-phrases to universally quantify over their intervals, they differ in the reason why this happens.

In accomplishments it is the homomorphic structure and the incremental theme what explain the semantic anomaly (Krifka, 1992; Dowty, 1989). Hence, if we take the first subinterval *i'* and the last subinterval *i"* of the interval *i* (an hour), the truth conditions will not be the same: while at *i"* it is true that Mary wrote an e-mail, at *i'* this is not the case (what she wrote is part of that e-mail, as I have explained before). If we found the same truth conditions at *i"* and at *i'*, the sentence would denote an amount of telic predicates of "wrote an e-mail", which is not the proper interpretation we get.

As it has been studied, accomplishments such as (30) can be reanalyzed as activities under particular contexts. A sentence such as (30) will be semantically well constructed if we have the interpretation that what Mary did was write parts of an e-mail, that is, if we have the interpretation that Mary was doing an activity of that kind (Basso, 2011). Thus, since these predicates have temporal structure and since they can be reanalyzed as activities, the for-phrase can modify them.

Let us focus on achievements, the kind of predicates that interest us. In these cases, the semantic anomaly lies on the fact that the sentence seems to be true at only one subinterval (let us consider *i'*). At any other subinterval (*i''*, *i'''*, for instance), the sentence is not true. As I have stated before, this observation follows from the claim that achievements are predicates that do not have a complex temporal structure (i.e., they are atomic). In fact, they happen at one and only one interval.

Even if it is true that achievements cannot have the mentioned interpretation when modified by for-phrases, it is still true that these predicates (many of them, at least) can have other kinds of interpretations[13].

(32) Mary won the race for 10 minutes.
i. Stative: Mary became the winner of the race for 10 minutes[14].

(33) Mary won the race for 10 years.
ii. Iterative: Mary has been the winner of that race several times for 10 years.

As can be seen above, a predicate such as "win the race" can have two kinds of interpretations depending on the period of time denoted by the for-phrase: the stative one (32) and the iterative one (33). While (32) means that for the period denoted by the for-phrase there exists the state of Mary being the winner of the race, (33) means that for the period denoted by the for-phrase there exist several events of winning the race that have Mary as the participant.

Let us consider now how these interpretations are obtained. On the one hand, in (32) the for-phrase operates over the interval at which Mary is in the state of winner of the race. Given that states have the subinterval property, for-phrases can universally quantify over their intervals. On the other hand, in (33) the for-phrase operates over an

13. In this part of the paper we will explore the different interpretations this predicates give rise to when they are modified by "for-phrases". I present for each sentence an informal meaning which is sketched under the example. Hence, the sentence under the example should be understood as the way we interpret that sentence.
14. This interpretation is not completely easy to get. Imagine a context in which Mary has been considered the winner of the race, but after ten minutes they realized that the true winner was another competitor.

unlimited amount of telic events. Since this amount of events behave as activities, for-phrases can also universally quantify over intervals.

It is interesting to notice that not all achievements trigger the same interpretation when combined with for-phrases: the kind of interpretation we get depends on the meaning of the predicates.

(34) Mary opened the door for 10 minutes.
Unique reading: state reading

(35) Mary arrived for 10 minutes.
Neither of them is possible.

Therefore, given the hypothesis on the atomic nature of achievements (i.e., they do not have internal temporal structure), interpretations (32-35) follow easily. Since for-phrases cannot operate over atomic predicates, when achievements combine with for-phrases, these phrases seek for an interval (within the idiosyncratic meaning of the item) at which they can universally quantify.

Let us concentrate now on semelfactive predicates. If this proposal is on the right path, and semelfactives are like achievements regarding their internal temporal structure, it follows that they have the same kind of interpretations. In other words, it is expected that they trigger a special reading when combined with for-phrases.

(36) Mary jumped for 20 minutes.
ii. Iterative: Mary jumped several times for 20 minutes.

That is exactly what happens. In (36) we can only have the interpretation in which Mary is the agent of an unlimited amount of jumping events. In other words, if a semelfactive predicate combines with a for-phrase, the sentence can only have an iterative reading because the for-phrase seeks for an interval at which it can universally quantify.

Even if this observation is true, it can be suggested that activities do not behave quite differently. As mentioned in section 2, it has been claimed that activity events have minimal parts which are the smallest events in P which count as events of P (Rothstein, 2004). For instance,

a predicate such as "run" has minimal parts which are the smallest event of running and count as the event of running. Considering this argument, it could be claimed that events in sentences in (37) and (38) are of the same nature.

(37) Mary jumped for 30 minutes.
There exist several jumping events for 30 minutes

(38) Mary ran for 30 minutes.
There exist several running events which count as events of running for 30 minutes

Hence, it could be said that in (38) Mary performed an amount of small running events which count as an event of running. We know that this observation follows from its homogeneous nature: running is an event that can be divided into small parts and each part will still be a running event.

Let us suppose that Mary is training and has to run for 30 minutes. The last time she tried, she could do it, but she had to stop once in order to drink water. If she says to her coach "Today I ran for 30 minutes", her coach would tell her that this is not true because she has not performed a unique event of running. However, if Mary is an amateur runner and, in the same scenario, states that proposition to a friend, the sentence will not be false because activities allow for pauses. Then, given the homogenous nature these predicates have and given the fact that they allow for pauses, a sentence such as (39) can have two kinds of interpretations:

(39) Mary ran for 30 minutes.
i. Mary performed more than one event of running[15].
ii. Mary performed a unique event of running.

If activities allow for an interpretation such as (39.i), it could be claimed that they behave like semelfactives and, in that case, our hypothesis would not be supported.

15. Even if the meaning presented in (39.i) is hard to get, as one of the reviewers observed, much of the literature on activities and homogeneity agree on this reading. For further details on this discussion, see Rothstein (2004), Landman & Rothstein (2012) and Borik (2006).

However, I claim that the similarity between activities and semelfactives cannot be correct. Even if activities can be divided in parts (because of their homogeneous nature), and in that sense, they can be compared to semelfactives, these events do not give rise to the same set of interpretations. While a sentence such as (40) allows for interpretation (40.i) and (40.ii), a sentence such as (41) only allows for one interpretation (41.i). That is to say, interpretation (41.ii) is forbidden for semelfactives.

(40) Mary ran for 30 minutes.
i. Mary performed more than one event of running.
ii. Mary performed a unique event of running.

(41) Mary jumped for 30 minutes.
i. Mary performed more than one event of jumping.
ii. *Mary performed a unique event of jumping[16].

Therefore, (41) can only mean that Mary performed more than one event of jumping, but it could never mean that Mary performed a unique event of jumping.

In sum, given that for-phrases are universal quantifiers that select predicates which have the subinterval property, when they modify achievements and semelfactives, both predicates trigger special readings. I claim that the reason is the following: since these predicates are atomic (they have no internal temporal structure), the for-phrase cannot operate over their temporal structure so a special reading arises. In the following subsection I will provide more evidence in favour of this hypothesis[17].

16. "*" means that this interpretation is not allowed.

17. Literature on aspect usually uses "for x time" and "in x time" in order to distinguish between telic and atelic predicates. While "for x time" states that the predicate should be true in different subintervals, "in x time" focus on the final part of the event denoted by the predicate. Therefore, predicates with a final part accept it and predicates without a final part reject it. As in Spanish we do not have a clear interpretation of activities modified by "in x time" ("Juan corrió en 10 minutos" 'John ran in 10 minutes' seems to mean that the activity of John running *a portion of space* took 10 minutes) we cannot compare the behavior of semelfactive with achievements and activities. Nevertheless, we can make some comments on the behavior of semelfactives and achievements with these phrases. If the time span of the phrase is really short (just like an instantaneous event), such as "in one second", we have the right interpretation: "John arrived in a second" or "John jumped

3.2. Progressive

In this last subsection I will proceed as in 3.1. I will compare the behavior of semelfactives and achievements when combined with the progressive operator in order to arrive to the same conclusion: when the progressive operator tries to operate within the temporal structure of semelfactives and achievements, they give rise to special readings: an iterative one (with semelfactives) and a preparatory phase one (with achievements). I will also compare semelfactives with activities in order to discuss Rothstein's empirical argument about the similarity between activities and semelfactives.

As it has been stated before, one of the most salient evidence in favour of the hypothesis that semelfactives are similar to activities is the fact that they behave alike when combined with the progressive operator.

(42) Mary was walking → She walked.
(43) Mary was jumping → She jumped.
(44) Mary was arriving --/-> She arrived.

As we can see, activities (42) and semelfactives (43) do not give rise to the imperfective paradox. If someone says "Mary was walking" we can conclude that she actually walked; that is, she performed an event of walking. The same happens with semelfactives: "Mary was jumping" implies that she did actually jump. In contrast, if someone says "Mary was arriving", it is not established whether Mary actually arrived.

The contrast between (42-43) and (44) seems to be a clear evidence in favour of the hypothesis that semelfactives and activities are of the same nature. In this section, I will study these cases and I will show that semelfactives behave like achievements.

in a second" denote the event of arriving or a single-event of jumping. However, if we widen the time span, given that these predicates do not have internal structure, the result will be a special reading: while in "John arrived in 30 minutes" we have the preparatory phase reading, in "John jumped in 30 minutes" we have an interpretation in which John performed several jumps in the period of 30 minutes.

In the analysis of the progressive, Bennett and Partee (1978) define the denotation of this operator in the following way: PROG[Φ] (the progressive applied to a sentence) is true at some interval *i* if and only if there exists an interval *i',* such as *i* is included in *i'* and *i* is not the final subinterval of *i',* and Φ (the sentence without the progressive) is true at *i'*. That is to say, for a sentence in the progressive to be true, it should be the case that the truth condition of the sentence in the progressive is evaluated at an interval *i* which is included in a larger interval *i'* in which the sentence without the progressive is evaluated.

When applied to activities, this denotation is correct. "Mary was walking" is true at *i* if and only if "Mary walked" is true at a larger interval *i'* which contains *i*. Given that "Mary walked" is true at *i'*, the sentence is true.

(45) Mary was walking.

Although this denotation is correct when applied to atelic events, such as (45), it is not the case when applied to telic predicates, such as the following ones:

(46) Mary was writing a paper.
(47) Mary was arriving.

Let us see what happens with an accomplishment such as (46). In order for (46) to be true at *i*, it should be the case that "Mary wrote a paper" is true at a larger interval *i'* which includes *i*. However, given the fact that it is not completely sure that Mary wrote the paper at i' (i.e., it could be the case that Mary was interrupted, for instance), the sentence is not true. In other words, telic predicates expose that the denotation of the progressive as defined in Bennett and Partee (1978) cannot be correct. This is the well-known imperfective paradox.

In order to solve this paradox, Dowty (1979) states that a sentence in the progressive should be evaluated at intervals and worlds. According to him, given that the relation between "Mary was writing a paper" and "Mary wrote a paper" is not necessary, but possible, we should study the progressive operator from the perspective of intentional semantics. Therefore, he states that PROG is an intentional operator

which evaluates propositions at different intervals and different worlds. Thus, PROG[Φ] (the sentence in the progressive) is true at *i* and *w* if and only if Φ (the sentence without the progressive) is true at an interval *i'* larger that *i* and at an inertial world *v*. Inertial worlds are worlds "which are exactly like the given world up to the time in question and in which the future course of events after this time develops in ways most compatible with the past course of events" (Dowty, 1979:148). In other words, they are worlds where the course of events develops as expected. Given that the sentence without the progressive is evaluated at a world where the course of events develops as expected, that sentence will be true. Therefore, inertial worlds allow scenarios where the telos of telic events can be reached.

For instance, in (46) we say that "Mary was writing a paper" is true at *i* and *w* if and only if "Mary wrote a paper" is true at an interval *i'* larger than *i* and at a world *v* where the course of events develops as expected, that is, a world where Mary did actually write the paper.

Let us focus now on achievement predicates. As I have claimed before, since accomplishments and achievements do not have the same internal temporal structure, it is expected that they behave in a different way when combined with the progressive operator. Rothstein (2004) states that the progressive operator cannot be combined with achievements because of their atomic nature[18]. In other words, since the progressive is an intentional operator that evaluates sentences at intervals and worlds, it is expected not to combine with predicates without an internal temporal structure. Hence, when the progressive is applied to achievements, the interpretation we have is what literature calls a "preparatory phase".

(48) Mary was arriving.

18. Rothstein denotation of the progressive follows Landman (1992). According to him, in order to combine with the progressive, the event should have stages. Specifically, the denotation will be the following: "An assertion of the form x is VP-ing is true if there is an event *e* going on which is a stage of an event *e'*, where *e'* is in the denotation of the VP. An event *e* is a stage of event *e'* if it develops into *e'*; in this case *e'* is a continuation of *e"* (Rothstein, 2004:45).

(48) does not denote the event of arriving, but a set of different and non-predictable events which are directly related to the event of arriving. For instance, depending on the context, (48) could mean that Mary is parking the car or about to knock the door, among other possibilities. That is, unlike accomplishments, achievements trigger special readings when combined with the progressive operator because of their atomic nature.

Before analysing this interpretation, I will show the interpretation semelfactives have when modified by the progressive. Given our hypothesis which states that semelfactives are atomic predicates, it is expected that they trigger a special reading when they are in the progressive. In fact, this is what happens: when semelfactives are in the progressive, they denote an amount of events of P —they have an iterative reading.

(49) Mary was jumping (when Peter arrived).
a. Mary performed a set of jumping events.

As we have seen in the previous subsection, semelfactives and activities do not give rise to the same set of readings. While activities can denote a set of drinking water events or an unique drinking event, semelfactives modified by the progressive can only mean that there is a set (or an unlimited amount) of jumping events.

(50) Mary was drinking water (when Peter arrived).
a. Mary performed a set of drinking water events.
b. Mary performed a unique event of drinking water.

(51) Mary was jumping (when Peter arrived).
a. Mary performed a set of jumping events.
b. *Mary performed a unique event of jumping.

In conclusion, when the progressive operator modifies an atomic predicate, we get a special reading as the progressive operates over intervals.

In the following part, I will present the explanation that Rothstein gives in order to account for the preparatory phase reading of achievements. According to her, this reading is the result of an aspectual

shift operation that takes place for the progressive to operate within the subintervals. That is, given that they are atomic predicates, they should suffer an aspectual shift operation. If this explanation were correct, semelfactives should give rise to the same reading because they are also atomic. Thus, we will explore this option and see if it is correct.

As I have stated before, according to Rothstein, achievements suffer a shift operation in order to combine with the progressive operator. This operation turns an achievement into an accomplishment, that is, into an event composed of two subevents.

(52) $\lambda e.(\text{BECOME}(P))(e)$
(53) $\text{SHIFT}(VP_{punctual})$: $\lambda e.(\text{BECOME}(P))(e) \rightarrow$
$\lambda e.\ \exists e_1 \exists e_2 [[e = {}^{s}(e_1 \sqcup e_2) \wedge (\text{DO}(\alpha))(e_1) \wedge (\text{BECOME}(P))(e_2) \wedge \text{Cul}(e)=e_2]]$

According to (53), if SHIFT applies to a punctual (i.e., atomic) event, the result will be an event composed of two subevents, e_1 and e_2. While e_2 is associated with the BECOME operator and takes the achievement predicate, e_1 is associated with the DO operator and takes an unbound variable -α- as the predicate does not contain lexical information related to a stage phase. Since the event created by the shift operation has a subevent with stages, the progressive can operate. In this sense, the progressive operates over e_1, a subevent that has stages and denotes a set of different and non-predictable events directly linked to the e_2 of arriving.

However, if the progressive operated over shifted achievements (i.e., achievements with an accomplishment event structure), it would be expected that these phrases behave like accomplishments. This is not the case, as we will see below.

As it has been claimed, “almost” adverbs are sensitive to the bieventive structure of accomplishments. That is to say, “almost” can take scope over each subevent of accomplishments. If it takes scope over the activity subevent, the result will be that the sentence means the event does not start at all (54.a). On the contrary, if it takes scope

over the change of state subevent, the sentence will mean that the event starts, but the change of state does not take place (54.b).

(54) Mary almost wrote a paper.
a. "almost" takes scope over an activity subevent: Mary did not start writing it.
b. "almost" takes scope over a change of state subevent: Mary started writing it but did not finish it.

Following Rothstein's idea of the progressive (see footnote 16 for further details), when the progressive operator modifies accomplishments, it takes the activity subevent, resulting in the meaning that there is an event *e* which holds and is a stage of an event *e'*. The meaning of "Mary was writing a paper" is: there is an event of "writing-paper" which holds and is a stage of the event "write the paper". Thus, what is denoted is the activity part, but never the change-of-state part. Considering this observation, we expect that if "almost" modifies an accomplishment predicate in the progressive, it will only take scope over the activity event.

(55) Mary was almost writing a paper.
Unique reading: "almost" takes scope over the activity event: Mary did not start writing it[19].

That is exactly what happens. (55) cannot mean that Mary started writing the paper, but did not finish it. Then, as expected, "almost" cannot take scope over the change-of-state event.

Let us see now what happens when an achievement predicate in the progressive is modified by "almost". Given the hypothesis that achievements in the progressive have the same eventive structure than accomplishments, we expect the same behaviour.

(56) Mary was almost arriving.
Unique reading: "almost" takes scope over the change of state event: Mary was performing a set of different and non-predictable events directly related to the event of arriving.

19. One of the reviewers has observed that, in her/his opinion, both interpretations were allowed in her/his native language, Brazilian Portuguese. In Spanish this is not the case. The only interpretation we have is the one presented in (55). If this intuition is shared by other BP speakers this observation should be deepen.

Therefore, what (56) cannot mean is that Mary did not start performing a set of different and non-predictable events directly related to the event of arriving. In other words, it cannot take scope over the activity event. If Rothstein's analysis were correct, "almost" would take scope over the activity subevent.

Even though it is not clear why we systematically have the preparatory phase reading when achievements are in the progressive, we can make the same statement we did in the last subsection: given that achievements are atomic predicates, when they are modified by the progressive operator, they trigger a special reading.

All in all, since the progressive operates over intervals and worlds, it cannot operate over atomic predicates. Given our hypothesis that semelfactives are like achievements in being atomic, these predicates are expected to trigger a special reading —which is exactly what we found. When the progressive modifies achievements, they get the preparatory phase reading. When it modifies semelfactives, they give rise to the iterative reading. It is important to point out that semelfactives do not give rise to the same set of readings than activities, as it would be expected if they had the same nature. While activities in the progressive can denote an unique event of P or an amount of events of P, semelfactives can only denote an amount of events of P.

4. Conclusions

In this paper, I have presented arguments in favour of the thesis that semelfactives are atomic and telic predicates. In the first section, I have briefly presented the main proposals about semelfactives and we have seen that these predicates are considered atelic (Smith, 1991) and non-atomic (Rothstein, 2004, 2008). In section 2, I have presented a proposal, which states that semelfactives are telic and atomic predicates. I have discussed the definition of telicity I consider as the most accurate and I have shown that semelfactives can fit in this notion of telicity. In section 3, I have provided arguments in favour of the main claim of this paper: semelfactives, like achievements, are atomic predicates (i.e., they do not have internal temporal structure). I have shown two pieces of evidence of the same kind: whenever an element tries to operate within

the temporal structure of these predicates, they present a special reading (i.e., they do not denote a unique event of P). Hence, in subsection 3.1., we have studied the readings these predicates have when combined with for-phrases. We have seen that, considering for-phrases quantify over subintervals, when these phrases modify achievements and semelfactives, both predicates trigger special readings (non-predictable for achievements and iterative for semelfactives). In subsection 3.2., we have studied the behaviour of these predicates when they are combined with the progressive operator. Since the progressive operates over intervals and worlds, it cannot operate over atomic predicates. Therefore, in these cases we also find a special reading (preparatory phase reading for achievements and iterative for semelfactives). All things considered, I claim that the reason is the following in both cases: since these predicates are atomic (they have no internal temporal structure), an element that tries to operate over their temporal structure will trigger a special reading.

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