

From meteorology to linguistics: what precipitation constructions in English, French and Spanish tell us about arguments, argumenthood, and the architecture of the grammar



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Abstract

This work takes the variation in syntactic configurations that precipitation verbs display in non-metaphorical contexts in English, French, and Spanish as a case study to examine more general questions about the notions of argument and argumenthood, and how arguments and other elements are introduced in the syntax. It also proposes a unified analysis of such constructions based on a constructivist model (Borer 2005). Specifically, it argues that the syntactic variation attested in this case is a by-product of the combination of general language constraints along with particular features of the functional elements (expletive types), and a general property of the architecture of the grammar: the possibility to merge (and pronounce) the same element in different syntactic positions. The latter explains away: the denominal character of precipitation verbs (Hale & Keyser 1991), thus, the presence of a DP that shares the verb's root (or a hyponym), and the syntactic and interpretational properties of the DP. In the same vein, some properties and constraints linked to precipitation constructions are reanalyzed as expected outcomes of specific structural configurations, and/or pragmatic effects. The paper also includes a detailed examination of the syntactic evidence that has been put forth to establish the argument status of weather-it, and concludes that once the full interpretation of the syntactic constructions is taken into account, such a claim cannot be justified. Although this work subscribes to the generative tradition, the empirical discussion developed here is relevant beyond this framework.

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The variation in (1–3), English, French, and Spanish, respectively, has been a source of debate over the past forty years with different studies suggesting different characterizations in terms of verb classes to account for the different patterns. Unlike previous works, the focus of this paper will not be on the verb (i.e., verb classes) but on the elements that appear in these constructions, which I think provide an interesting case study.

- (1) a. It rained.
b. It rained a light rain.
c. A light rain rained over the city.
- (2) *French*
a. Il a plu.
EXPL rained.3SG
'It rained.'
b. Il a plu toute la journée une petite pluie fine. (Ruwet 1987: 323)¹
EXPL rained.3SG all the day a little rain fine
'It rained all day a little drizzling rain.'
- (3) *Spanish*
a. Llovió.
rained.3SG
'It rained.'
b. Llovía una lluvia muy fina.
rain.IPFV.3SG a rain very fine
'It was raining a very light rain.'

From the data in (1–3), we can conclude that precipitation verbs are able to participate in different syntactic frames, an unsurprising property, as this is also the case with many other verbs. However, there are two features that make the variation in (1–3) unique. First, the range of possibilities that it encompasses is very broad: it spans from configurations where the verbs appear by themselves, (a)-sentences, to configurations that include DPs in syntactic positions usually linked to arguments, (b) and (c)-sentences.² Second, the elements that appear in these constructions, despite lacking argument properties (in most cases), seem to behave as such. It is on this property that the present study focuses through the examination of two theoretical questions that can shed some light onto their seemingly unusual behaviour: how do we determine whether a given element is a syntactic argument?, and how are arguments and other elements introduced in the syntax?

Taking precipitation constructions as a case study, the first aim of this work is to show that, in some cases, to establish the argument properties of a given element we need to go beyond generally accepted tools of syntactic assessment such as syntactic distribution and syntactic behaviour, and consider the interpretational properties of both the construction in which the element is found and the elements that appear in such constructions. The second aim is to show that the pattern found in precipitation constructions, if taken as a possible outcome as opposed to an exception, offers support for a constructivist model of the grammar, one based on the so-called naked root approach, as in Borer (2005).

Generally speaking, and borrowing the characterization from an anonymous reviewer, precipitation constructions present us with a case of non-arguments masquerading as arguments. Since, as will be shown, neither the DP nor the pronoun can be considered arguments of the verb, I will argue that their presence in these structures is a by-product of the combination of general language constraints along with the particular features of the functional elements in these languages, and general properties of the architecture of the grammar. Specifically, a

¹ Some modifications in the glosses and the translation were made.

² I am assuming that the two pronouns that appear in English and French, *it* and *il*, are expletives (i.e., non-arguments). Evidence for this will be discussed in Section 3.

constraint like the EPP and the properties of functional lexical items—expletive types: overt vs. covert, and whether they bear or lack phi features—can account for both the presence and cross-linguistic variation of the pronominal items. On the other hand, the possibility to merge (and pronounce) the same element in different syntactic positions, a general property of the grammar, can account for: a) the denominal character of precipitation verbs (Hale & Keyser 1991), from which the possibility that a DP that shares the same root as the verb (or a hyponym) realized in the structure simply follows, and b) the argument-like behaviour of the DP in (1c), and its non-argument properties in the (b)-sentences.

This work is organized as follows. The next section provides an overview of previous analyses about precipitation constructions in the three languages, summarizes the general properties of these structures, and introduces some of the theoretical issues that will be addressed in Section 3. It also offers the empirical motivation behind data selection. Section 3 comprises a detailed examination of the syntactic and interpretational properties of weather-it and the DP. In Section 4, I present an alternative analysis of precipitation constructions based on a constructivist model, which incorporates Hale & Keyser's (1991) intuition of precipitation verbs being denominal. The paper ends with a brief summary and general remarks.

2 Overview of precipitation constructions in the three languages

Precipitation verbs have received different classifications depending on both the language and the structure analyzed. In Romance, some studies consider them to be unaccusatives (Ruwet 1987, French; Calzado Roldán 2000; Meulleman & Stockman 2013, Spanish), while others propose that they are unergatives (Zubizarreta 1985, French and Romance in general). The possibility of dual behaviour within the same language has been noted in Italian (Benincà & Cinque 1992). Recently, the same has been suggested for English (Levin & Krejci 2019).

The existence of these various characterizations represents a theoretical problem for projectionist analyses where a mapping between arguments and syntactic positions is assumed, and arguments are supposed to project from the verb. This is true not only in the case of cross-linguistic variation, but also in cases of variation within a language. For instance, several questions arise from (1): how do we go from (1a) to (1b)?; is there an implicit object in (1a)?; are (1b) and (1c) alternating structures?, if so, what type of alternation do they represent?

While most of these questions have been addressed in previous studies, a less discussed topic is the argument status of the elements that appear in them, Paykin (2010), and Levin & Krejci (2019) being two exceptions to this claim. Interestingly, their characterizations are different. Paykin proposes that precipitation verbs in their non-metaphorical uses are avalent in French, i.e., they lack arguments. Specifically, she argues that the DP that appears in non-metaphorical constructions is not a real object, because, unlike objects of unaccusative verbs, its presence is not obligatory, (4a–b), it does not move to the preverbal field, (5), and it may bear an adverbial interpretation, (6). In her analysis, as well as in Ruwet (1987), *il* is considered an expletive.

(4) *French* (Paykin 2010)

- a. Il a plu toute la journée.
 EXPLrained.3SG all the day
 'It rained all day.'
- b. Il a plu une pluie froide toute la journée.
 EXPLrained.3SG a rain cold all the day
 'It rained a cold rain all day.'

(5) *French*

- a. *?Une pluie froide a plu toute la journée. (Ruwet 1987; Paykin 2010)
 a rain cold rained.3SG all the day
- b. La pluie tombe. (Ruwet 1987: 322)
 the rain falls
 'Rain is falling.'

- (6) *French* (Ruwet 1987: 328)
- a. Il a plu de grosses gouttes.
 EXPLrained.3SG of big drops
- b. Il a plu à grosses gouttes.
 EXPLrained.3SG at big drops
 ‘It rained heavily.’

Levin & Krejci (2019), on the other hand, argue that both weather-it and the DP are arguments in English, and propose that precipitation verbs can be construed as substance emission, (7), and directed motion events, (8). In their analysis, the alternation between the two configurations arises from the fact that the root lexicalizes only a small number of the attributes of the happenings it is used to describe.

- (7) Levin & Krejci (2019)
- a. It rained (a light rain).
 b. The well gushed (oil).
- (8) Levin & Krejci (2019)
- a. A light rain rained on my head.
 b. An apple fell on my head.

While it is in principle possible for precipitation verbs in these languages to not pattern alike with respect to arguments, there are strong similarities among (1–3) that suggest this may not be the case.³ From an interpretational perspective, the most salient property is that in the three languages precipitation verbs by themselves seem to be enough to convey the meaning of what I will call for convenience a canonical precipitation event. This is the case of a natural raining event that involves raindrops falling due to gravity, which can be paraphrased as ‘there is rain falling.’⁴ In terms of arguments, this means that precipitation verbs lack arguments. Another common feature is that a DP whose root is the same as the verb’s may appear in non-metaphorical precipitation constructions. In such cases, there is also a common requirement: the DP needs some modification. When there is compatibility between the DP modifier and the properties of the event that the verb encodes, an adverbial interpretation emerges in the three languages. When there is no compatibility, the DP has a classificatory function specifying the properties of the precipitation substance. The DP can also be a hyponym that specifies the type of substance, e.g., drizzle, sleet, etc. **Table 1** summarizes the properties of precipitation constructions in the three languages and the classifications that precipitation verbs have received.

Table 1 General properties of precipitation constructions in English, French and Spanish, and classifications.

	English	French	Spanish
Default precipitation event	<i>It rained.</i>	<i>Il a plu.</i>	<i>Llovió.</i>
A DP from the same root of the verb may appear	<i>It rained a light rain.</i> <i>#It rained a rain.</i>	<i>Il a plu une petite pluie fine.</i> <i>#Il a plu une pluie.</i>	<i>Llovía una lluvia fina.</i> <i>#Llovía una lluvia.</i>
Adverbial interpretation of the DP	<i>It rained a light rain. =></i> <i>It rained lightly.</i>	<i>Il a plu de grosses gouttes. =></i> <i>Il a plu à grosses gouttes.</i>	<i>Llovía una lluvia fina. =></i> <i>Llovía finamente.</i>
Classificatory interpretation of the DP	<i>It was raining a cold rain.</i>	<i>Il a plu une pluie froide.</i>	<i>Llovía una lluvia fría.</i>

(Contd.)

³ In the case of Spanish, the argument status of the DP has been largely assumed based on its presence. Additionally, the idea of a null argument is not generally considered. Note, however, that a sentence like (i) could be ambiguous between a structure that contains a null expletive, and a structure where the DP *una lluvia muy fina* ‘a light rain’ functions as the subject. These cases have always been classified as unaccusative, e.g., Calzado Roldán (2000), Meulleman & Stockman (2013).

(i) Llovía una lluviav muy fina.
 rain.IPFV.3SGa rain very fine
 ‘It was raining lightly.’

⁴ I am abstracting away from the presence of *it* and *il* in English and French, which I take to be expletives. Section 3 provides evidence for this treatment.

	English	French	Spanish
Hyponyms	<i>It's raining sleet.</i>	<i>Il a plu de la grêle.</i>	<i>Llovía aguanieve.</i>
Classifications that precipitation verbs have received	Unergative: <i>It rained a light rain.</i> (Levin & Krejci 2019)	Unergative (Zubizarreta 1985)	Unergative (Zubizarreta 1985)
	Unaccusative: <i>A light rain rained over the city.</i> (Levin & Krejci 2019)	Unaccusative: <i>Il a plu toute la journée une petite pluie fine.</i> (Ruwet 1987)	Unaccusative: <i>Llovía una lluvia muy fina.</i> (Calzado Roldán 2000, Meulleman & Stockman 2013)
		Avalent: <i>Il pleut (une petite pluie fine).</i> (Paykin 2010)	

A combination of theoretical assumptions and the methods employed to evaluate argument status underlie the characterization that the elements that appear in these constructions in English have received. In other words, some of the procedures followed to determine whether an element is a syntactic argument impact the conclusions obtained. Thus, to understand these constructions, we must reconsider how we determine the argument status of a given syntactic element.

While providing a definition of what an argument is has proved a difficult topic (see Williams 2015), there are two generally accepted features that are used to characterize arguments: semantic content and referentiality. Specifically, arguments are considered to bear a general semantic interpretation, i.e., a semantic role, and they are taken to be referential. Additionally, roughly speaking, arguments are said to be necessary to convey the meaning of the verb—at least the meaning that is intended in the context they are used. In other words, their absence results in an ungrammatical structure. Depending on the approach, arguments are said to project from the verb, the projectionist view, or they are elements merged in syntactic positions associated with specific functions and interpretations, the constructivist view. The two approaches make different predictions with respect to the elements that can be found in a given structure, something that will be discussed in the light of precipitation constructions in Section 4. Both approaches, however, make use of the idea that there is a link between syntactic positions and the argument status of an element.

In addition to referential and semantic content, some syntactic properties associated with specific argument configurations are also used to determine or confirm the status of elements. For instance, since structural accusative case is dependent on the existence of an external argument (Burzio's generalization), the fact that a DP bears accusative case is taken as evidence that the DP that appears in the subject position is an external argument. The combination of semantic requirements and syntactic distribution is also used to establish the argument properties of elements. While the use of these methods is not a problem per se, there are instances that require us to dig deeper to be able to obtain a proper characterization. I believe this to be the case with precipitation structures. The problem is that, as will be shown, if we only consider distributional evidence and so-called syntactic behaviour, or if we take the presence of some syntactic property without considering all possible options, false positives abound. Before showing how this happens, some observations about the data used in this work are in order.

2.1 Data selection

Thus far I have been referring to non-metaphorical precipitation constructions as the type of constructions that will be used in this study without offering an explanation for it. The selection, however, is far from arbitrary. It is based on the idea that there are syntactic and interpretational features that set metaphorical and non-metaphorical contexts apart, a fact that goes against a unified treatment or an analysis based on properties of both.⁵ Paykin (2010) puts forth a similar argument regarding the need to differentiate the two contexts in French. In what follows I show that the same distinction needs to be made in English and Spanish.

⁵ Treating both contexts along the same lines is a common practice in most works, e.g., Ruwet (1987), Calzado Roldán (2001), Meulleman & Stockman (2013), Levin & Krejci (2019), among others. This, however, has contributed to blur some of the properties of canonical precipitation structures.

The first piece of evidence comes from differences in agreement patterns in Spanish. Metaphorical constructions display obligatory agreement with the postverbal DP, (9), while non-metaphorical constructions show variable agreement, (10). In the latter case, both the default third person singular agreement pattern of impersonal constructions, and agreement with the postverbal DP are possible. Differences in agreement patterns between the two types of constructions are likely the result of differences in their syntactic structures: non-metaphorical constructions may contain a null expletive as their subject, while metaphorical constructions have a DP.⁶

- (9) *Spanish*
 En el parlamento, llovieron / *llovió los insultos/aplausos.
 in the parliament rained.3PL/ rained.3SG the insults/applauses
 ‘Applauses/insults rained down during the parliament session.’
- (10) *Spanish*
 Llovió / Llovieron unas pocas lluvias/ 200 milímetros en 24 horas.
 rained.3SG/rained.3PL some few rains/ 200 millimetres within 24 hours
 ‘It rained a few rains/ 200 millimeters within 24 hours.’

The same alternating agreement pattern is found in metaphorical constructions that refer to a raining event.

- (11) *Spanish*
 Llovió/ llovieron chuzos de punta.
 rained.3SG/ rained.3PL spiked-sticks peaking
 ‘It rained a lot.’

Differences in the interpretation of the DP in the two contexts provide another piece of evidence. As mentioned before, in non-metaphorical constructions, DPs may bear an adverbial interpretation, this is never the case for DPs in metaphorical constructions that do not refer to a raining event. Compare (12a) and (13a) to (12b) and (13b), respectively.

- (12) a. It was raining a light rain. => It was raining lightly.
 b. It was raining bombs from the sky.⁷
- (13) *Spanish*
 a. Llovía una lluvia fina. => Llovía finamente.
 rain.IPFV.3SG a rain fine rained.IPFV.3SG lightly
 ‘It was raining a light rain.’
 b. Ese día, llovieron bombas del cielo.
 that day rained.3PL bombs of+ the sky
 ‘On that day, bombs rained from the sky.’

Even in cases where an adverbial interpretation does not emerge in non-metaphorical contexts, the DP interpretation is still different. Notice that in (14) the DP provides information about a property of the rain, a sort of classificatory function. More importantly, the sentence refers to a canonical raining event.

- (14) It was raining a cold rain.

⁶ We may need two expletives in this case: one with phi features and another that lacks them, or, at least, without a number feature. Agreement variability is not only found in precipitation constructions; it is a pervasive phenomenon in impersonal contexts in Spanish. See Rodríguez-Mondoñedo (2006) for an overview and discussion of the different proposals that have been put forth to account for it.

⁷ Although (12b) is attested, some speakers say that it sounds more natural if the DP is realized as the subject: *Bombs were raining from the sky*. This may be another difference between metaphorical and non-metaphorical contexts with respect to the syntactic functions of the elements that appear in them.

A third difference concerns DP movement to the preverbal field. Both Paykin (2010) and Ruwet (1987) note that DP movement in non-metaphorical constructions is not as natural as it is in metaphorical constructions in French. The same pattern holds in Spanish, (15).

- (15) *Spanish*
- a. Llovía una lluvia monzónica.⁸
 rain.IPFV.3SG a rain monsoon
 ‘It was raining a monsoon rain.’
- b. Llovía una lluvia mansa pero persistente.⁹
 rained.IPFV.3SG a rain gentle but persistent.
 ‘It was raining a gentle but persistent rain.’
- c. ??Una lluvia fina/ mansa/ monzónica llovía (...).¹⁰
 a rain fine/ gentle/ monsoon rain.IPFV.3SG

Finally, the meaning of the verb also differs in the two contexts. Notice that in metaphorical contexts that do not refer to a precipitation event the meaning of the verb can be paraphrased as ‘to fall in a rain-like manner,’ i.e., some type of quantity-falling, (16a).¹¹ The same description holds in (9) and (13b), in Spanish. When an agent is included, the verb is interpreted as ‘to throw in a rain-like manner,’ i.e., some type of quantity-throwing, (16b) and (17), in English and Spanish, respectively.

- (16) a. Bombs were raining from the sky.
 b. He showered us with bullets, and he rained us with shell.¹²

- (17) *Spanish*
- Les llovimos la portería a goles.
 CL.3PL.DAT rained.1PL the football goal to goals
 ‘We scored many goals against them.’

In (16–17), a bleaching process has taken place in the verb, whereby only the movement part of its meaning and some kind of plurality condition related to the event are retained. The use of plurality in this case could be a misnomer. Notice that the plurality interpretation can be obtained as the result of an action that is iterated, (17). Overall, (16–17) show that the meaning of the verb is different in metaphorical and non-metaphorical contexts. A plausible hypothesis is that interpretational differences between the two contexts are due to differences in their syntactic structure which, I will argue, stems from differences in the argument status of the elements that appear in them. It is because of the aforementioned that this work also adopts a separation between metaphorical and non-metaphorical uses of precipitation verbs, and focuses on non-metaphorical uses.

3 On the status of weather-it and the DP in non-metaphorical precipitation constructions: re-examining the syntactic evidence

In this section I examine the interpretational and syntactic evidence that previous studies have provided in favour of the argument status of weather-it and the DP in English. Previous proposals about the semantic content of weather-it and new data about the DP will be considered. A

⁸ <http://medicinaenlacabecera.blogspot.com/2016/05/la-pobreza-y-la-muerte.html>, accessed 1/10/2021.

⁹ https://ar-ar.facebook.com/groups/118258931633/permalink/10157079946921634/?comment_id=10157082749791634&comment_tracking=%7B%22tn%22%3A%22R%22%7D, accessed 1/10/2021.

¹⁰ A Google search yields no results for examples that include a preverbal subject. Note that this type of search does not exclude cases that include a PP coda, which is supposed to be a requirement in English for this type of configuration.

¹¹ Paykin (2010) notes something similar in French. She argues that precipitation verbs in metaphorical contexts in French can be considered synonyms of *tomber* ‘to fall’.

¹² *And the Band played Waltzing Matilda*, by Eric Bogle. https://en.wikipedia.org/wiki/And_the_Band_Played_Waltzing_Matilda, accessed 1/10/2021.

central feature of the discussion is that it incorporates the meaning of the constructions, a factor that has been overlooked in most analyses. In some cases, data from French and Spanish are employed to provide a cross-linguistic perspective.

3.1 Weather-it: expletive or argument?

Despite the similarity between (18a) and (18b), the classification of the pronominal items in the two languages does not coincide.¹³ While there seems to be a consensus about *il* being an expletive in French, weather-it, in English, has received two opposing characterizations: a) expletive (Darden 1973; Postal & Pullum 1988; Ruwet 1991; inter alia), and b) argument (Bolinger 1973; Chomsky 1981; Rizzi 1990; Pesetsky 1995; Levin & Krejci 2019). Additionally, studies that propose the latter option do not agree on the semantic and referential properties of weather-it, with descriptions that range from a non-referential quasi-argument (Chomsky 1981) to a fully referential argument (Bolinger 1973).¹⁴

- (18) a. It rained.
b. Il a plu.
EXPL rained.3SG

Regarding the semantic content of *it*, Bolinger suggests that it refers to the environment, and labels it ambient-it. His argumentation is built around the interpretation of the pronoun in examples of the type: *It's hot in X* or *It's nice in X*, where the properties of being hot or nice are presumably attributed to a general-encompassing-deictic-entity which is identified as *it* or to which *it* refers. Although Bolinger includes two examples with precipitation verbs, he does not provide further details about the interpretation of *it* in such cases. His examples are meant to illustrate that *it* may appear in other syntactic positions than the subject's, (19) (Bolinger 1973), which he takes as evidence that *it* is more than an empty element introduced to fulfil the subject requirement in English.¹⁵

- (19) a. When we got there we found it raining.
b. I like it snowing.

Given the differences between the two types of predicates, it is hard to envisage how Bolinger's characterization of *it* should be understood in predicates of the latter type. If we take the idea that *it* refers to the environment along with the fact that *it* is the subject of an eventive predicate, we may conclude that *it* has some kind of semantic role in precipitation events. If, on the other hand, we focus on the interpretation of *it* without taking into account the eventive nature of the predicate, then raining and snowing could be events that happen within (the limits of) *it*. In the two cases the interpretations of *it* would be different and, more importantly, hard to define.

One thing that goes unmentioned when citing Bolinger's proposal about ambient-it is that he argues it should be extended to the *it* found in other contexts like *It's hard to study* (where *it*, of course, does not refer to any specific subject, and the interpretation of the sentence could be paraphrased as 'studying is hard'). He states that if the two elements are not the same, "they are at least connected by a gradient too smooth for separation to be anything but arbitrary" (265). He further notes that a problem has been to restrict our vision of *it* to expressions of weather and time, and concludes that all uses of *it* derive from a common semantic base. It is hard to determine whether his reasoning extends to the *it* found in raising predicates like *seem*. If this were the case, then it would undermine the premise of analyses that oppose

¹³ The different treatment of the pronominal items is an example of how parallels and assumptions that different studies have adopted have shaped their results. Since *il* is used in constructions that include unaccusative verbs in presentational contexts in French, Ruwet (1987) takes its presence as evidence that precipitation verbs are unaccusative. See Paykin (2010) for an analysis and discussion of Ruwet's arguments.

¹⁴ Differences in this case emerge from the type of analysis. Chomsky's characterization derives from an analysis based on syntactic distribution, while the fully referential argument characterization emerges from analyses that combine syntactic distribution and interpretative properties to different degrees.

¹⁵ The same data have been used to argue that expletives can appear in other syntactic positions in addition to the subject's, see Postal & Pullum (1988). Interestingly, such possibility is restricted by the properties of the expletives. Perlmutter & Moore (2002) show that the realization of *il* in French is restricted to environments that require nominative case.

the syntactic behaviour of the two *as* means to demonstrate the argument status of weather-*it*. Interestingly, Bolinger highlights the similarities between a proposal that makes a parallel between the pronominal elements in *it seems* and *it's cold today* and his idea of ambient-*it* being meaningful. However, he does not say whether he agrees with said proposal or just with the idea of *it* having some content in the second environment. Overall, Bolinger's proposal of ambient-*it* being meaningful can be seen as an ad hoc rationalization probably influenced by the combination of three factors: a tendency to favour a bi-partite interpretation of sentences (i.e., the theme-rheme division), the fact that in English an overt element with nominative case is always realized in the subject position, and the strong hypothesis that *it*, which bears lexical content in some contexts, cannot have a counterpart that is devoid of it.¹⁶

A more specific characterization of *it* is that of Levin & Krejci (2019). Based on the parallel that they propose between precipitation constructions and constructions that include substance emission verbs, (20) and (21), (based on Levin & Krejci 2019), they conclude that weather-*it* is interpreted as a source.

- (20) a. It rained (a light rain).
b. A light rain rained over my head.
- (21) a. The well gushed (oil).
b. Oil gushed from the well.

A problem with this proposal is that the so-called source interpretation of weather-*it* only emerges when it occupies the subject position. Unlike substance emission verbs that allow the source to be realized both as the subject and as part of a prepositional phrase (PP), weather-*it* cannot be part of a PP and preserve its source interpretation, a DP must be realized in its place, (22).

- (22) a. Oil gushed from the well.
b. *A light rain rained from it. (on intended interpretation)
c. A light rain was raining from the sky.

The possibility to include two sources in the same sentence is also puzzling, (23). One may be tempted to say that weather-*it* is a more general type of source that needs to be specified. However, this solution withdraws (part of) the semantic value that was attributed to weather-*it* in the first place. Another problem is that we need to stipulate the existence of different types of source.

- (23) It's raining from the sky down on the earth.¹⁷

Overall, the data in (22) show that the source interpretation of weather-*it* seems to be contingent on its realization in the subject position, something somehow unexpected if we consider the interpretation of other sources. More importantly, (22–23) corroborate the idea that the semantic interpretation of weather-*it* is rather elusive, a property that has been associated to its status as an expletive. In addition to interpretational properties, the syntactic behaviour of weather-*it* has also been used to argue in favour of its argument status. In the next section I discuss the syntactic evidence provided to this end.

3.1.1 Syntactic evidence about the argument status of weather-*it*

Within generative grammar, the claim that weather-*it* bears a semi-argument or argument status is largely due to differences found between its syntactic distribution and that of the element that has the same phonological form and appears in raising predicates like *seem* and *appear*, which is labelled a true expletive. Specifically, it has been proposed that weather-*it*: a) can control PRO, whereas true expletive *it* cannot (Chomsky 1981; Rizzi 1990; Pesetsky 1995; Levin & Krejci 2019), and b) can be the subject of control verbs (Pesetsky 1995; Levin & Krejci 2019). While most of these works barely discuss the status of weather-*it*, Levin & Krejci (2019)

¹⁶ Bolinger (1973) considers that the expletive classification of *it* is due to an analysis that focuses exclusively on syntax.

¹⁷ *It's raining, it's pouring, and I'm wet*, by Bobby Susser.

provide a wide-ranging array of syntactic contexts as evidence of the previous statements. For this reason, I will mainly focus on their work to assess the longstanding claim that weather-*it* bears an argument or semi-argument status in English.

Two crucial issues should be considered before examining the evidence. First, note that a non-trivial problem emerges when evaluating the properties of weather-*it*: its so-called argument status cannot be attested outside weather constructions. The theoretical problem that this poses is that it could be the case that its behaviour does not derive from its properties, but from the syntactic context in which it appears, i.e., the type of predicate. By the same token, the fact that weather-*it*'s syntactic behaviour does not parallel the behaviour of expletive *it* with raising verbs does not necessarily entail that expletive *it* and weather-*it* are two different elements. As will be shown, the difference between the two types of predicates repetitively emerges and seems to play a primary role in the differentiation of the two syntactic contexts, something that, I believe, has been erroneously extended to the pronominal items. The second issue is that even though the semantic properties of some of the elements that weather-*it* may combine with have been used to argue in favour of its argument status, the full interpretation of the constructions has been overlooked. The problem in this case is that while it is true that weather-*it* can participate in syntactic environments where only arguments are supposed to appear, the interpretation of such constructions differs from the interpretation of the constructions they are being compared to.

The first piece of evidence that we are going to consider from previous studies is both distributional and interpretational: weather-*it* can appear in positions that are typically restricted to arguments, while true expletive *it* cannot (Pesetsky 1995; Levin & Krejci 2019), (24).¹⁸

- (24) a. It tried [_ to rain today] but the sun came out! (Levin & Krejci 2019, (10a))
b. The first in ten summers that it refused [_ to rain] (Levin & Krejci 2017, (15b))
c. *It tried/refused [_ to seem that Tracy jogged]. (Levin & Krejci 2018, (7c))

Since control verbs impose semantic restrictions on their subjects, it is generally accepted that these cannot be expletives. Thus, the grammaticality of (24a–b) versus the ungrammaticality of (24c) is taken as an indication that weather-*it* functions as an argument. Note, however, that while the argument is about subject types, there is an extra layer (the predicates) that sets apart the context where the two subjects appear. While it is true it may not be possible to separate them, it is also possible that this extra layer has an impact. For the moment note that there is a difference between the two verbs: while precipitation verbs refer to an event, raising verbs like *seem* lack any eventive interpretation. They simply introduce a proposition. More specifically, they denote a function from propositions to propositions (Jacobson 1992: 149).

A second point has to do with the interpretation of examples (24a–b). Although they are syntactically licit, their meaning is different from the meaning of constructions that include animate subjects. Notice that the interpretation of (24a–b) is not so much about actually trying or refusing, but about the fact that an event took place or not, and expressing its likelihood to occur or the circumstances and specifications about it. (24a), for instance, could mean that it seemed that it was going to rain, but it did not happen in the end, or that it rained a little and then it cleared up. (24b) refers to the unusual event that there was no rain in the summer. Note that some of these interpretations are obtained pragmatically due to presuppositions that emerge from the combination of the different elements; this is the case of *refuse* and *the first in ten summers*. Generally speaking, it seems that in these cases control verbs are functioning as tense carriers and quantifiers gauging the possibilities of an event to occur. Thus, in a sense, it could be said that their function is similar to that of an aspectual operator. Support for this idea comes from the fact that the acceptability of (24a–b) is constrained by the time at which the event takes place, as (25) illustrates. On the other hand, in the case of animate subjects (probably human), there are no temporal restrictions, (26).

¹⁸ Levin & Krejci (2019) state: “Precipitation *it* appears in what are considered to be argument positions, and specifically, positions that are typically filled by agents, volitional arguments with control over the unfolding of the event they are participating in.”

- (25) a. ?It is going to try to rain tomorrow.
b. #It won't refuse to rain this the summer.
- (26) a. I'm going to try to come tomorrow (but it depends on the weather).
b. He won't refuse to sign you a copy of his book. (I'm sure.)

What examples (24a–b) suggest is that in some contexts the so-called selectional restrictions that control verbs are supposed to impose on their subjects seem not to hold. However, one condition must, there has to be an event. It is plausible then to argue that what these verbs are doing is taking scope over the event. If this hypothesis is correct, it should be possible to drop them without altering the meaning of these sentences, and only losing some of the information about the likelihood of the event to occur in some of the cases, provided that tense is incorporated. (27) shows that this is the case. Note that the probability of the event to occur can be recovered by including a PP, (27a).

- (27) a. In the end, it did not rain today and even the sun came out.
b. It was the first in ten summers that it did not rain.

By the same token, it is also possible to use control verbs that appear to be more restrictive regarding their subjects—as their meaning seems to imply that some kind of consciousness is needed—with precipitation verbs, (28). The same behaviour is found with shoes and bags (29), which do not have the capacity to be effectors, if we take effectors to be “agents, natural forces and other causes, emitters, and certain instruments—those instruments which can perform an action in some sense autonomously” (Levin & Krejci 2019: footnote 7).¹⁹

- (28) a. It decided to rain almost all day long yesterday.²⁰
b. It decided to rain just when we left the house.
- (29) a. My shoe decided to break during work and this is the best I can do until I get home.²¹
b. Only when my bag tried to slip farther did I pull back.²²

Notice that in some of these contexts, as well as in Levin & Krejci's (2019) examples, control verbs can be replaced by aspectual verbs like *begin*, *start*, *continue*, *finish*, *stop*, etc. (In other cases, they simply can be dismissed, provided that tense and some contextual information about the likelihood/conditions of the event are included.) What is significant about this is that aspectual verbs are ambiguous between raising and control structures (Landau 2013: 158). If control verbs are behaving like aspectual verbs in these contexts, then a possibility is that these are instances of raising and not control. While raising does not go against the possibility of weather-it being an argument, independent evidence must be provided to show that this is the case, given that another possibility is that an expletive is inserted in a non-theta position in the matrix clause, (30).²³

- (30) It began to seem that one would have to hold in the mind forever two ideas which seemed to be in opposition.²⁴

Finally, notice that the meaning that becomes activated in these cases is also available in constructions that include agents like (31a). Unlike the previous examples, however, (31a) also

¹⁹ An anonymous reviewer points out that examples (28) and (29) can be considered literary personifications. This is especially visible in (29). Note that the personification interpretation is compatible with the idea that the elements that appear in the subject position in these cases do not have the properties that usually appear in such position. This, as the reviewer points out, strengthens the argument developed here.

²⁰ https://www.instagram.com/p/BpfQ_8qA8Sv/?hl=en, accessed 1/10/2021.

²¹ <https://imglore.com/tag/diyshoerepair>, accessed 30/3/2020.

²² Ellie Cahill, *Call me, maybe*. Random House Publishing Group (2016).

²³ Note that this is different from adopting the Movement Theory of Control (Boeckx, Hornstein & Nunes 2010), as my claim is that in these contexts control verbs do not have the properties that they bear in contexts like ‘Sue decided/wants to leave’, i.e., they impose no restrictions on their subjects.

²⁴ James Baldwin, *Notes of a native son*. Beacon Press (2012).

carries the meaning associated with agentivity, (31b), cf. (32); thus, it cannot be reduced to the paraphrase in (31c).

- (31) a. Finally Sue decided to study.
 b. Finally Sue decided to study, but she hasn't started yet. She is going to start tomorrow.
 c. Finally Sue is studying/studied.
- (32) #In the end/Finally it decided to rain, but it hasn't started yet. It's going to start in an hour.

A possibility may be that instances that include agents are potentially ambiguous between raising and control structures, while those that lack agents correspond to raising structures only. In the latter case, only control verbs that are similar to aspectual verbs, i.e., whose meaning (or part of it) indicates a change or turning point may appear. One can speculate that this hypothesis is in line with the fact that so-called effectors are only compatible with a limited set of control verbs, and their use is restricted mostly to the past. With regard to instances that include effectors and allow control verbs in the future, my intuition is that they are possible based on both our knowledge of the world and our capacity to make predictions about the behaviour of such entities. Lastly, note that a restriction based on consciousness, which would allow distinguishing effectors vs. agents in the context of *try* and *hope*, fails given that verbs like *decide* can also be used with subjects that have no capacity to do so, (29). Going back to raising predicates like *seem* and *appear*, we can conclude that since they do not refer to any event, they do not allow for this possibility. Thus, other elements beyond the expletive may be interfering with the grammaticality of (24c). Interestingly, when the predicate that combines with a control verb refers to a property, as opposed to an event, non-agent subjects are less felicitous (if not impossible), (33).

- (33) a. John is trying/tried to be faster.
 b. ??My computer is trying/tried to be faster.

Beyond English, both French, (34), and Spanish, (35), allow the same uses of control verbs in precipitation constructions. Both languages show the same behaviour as English: a) uses *seem* to be restricted to the present or the past, and b) control verbs only bear the interpretation related to the happening or not of the event.

- (34) *French* (examples adapted from Muller 2011)
- a. Il essaie de pleuvoir aussi (...).
 EXPL tries of rain.INF too
 'It is trying to rain as well.'
- b. Il a donc décidé de pleuvoir aujourd'hui mercredi (...).
 EXPL has then decided.PTCP of rain.INF today Wednesday
 'Then it decided to rain today Wednesday.'
- c. À Dijon, y'a très souvent du soleil (...)sauf quand il
 in Dijon there-is very often of+ART.M.SG sun except when EXPL
 décide de pleuvoir!
 decides of rain.INF
 'In Dijon, it is sunny very often... except when it decides to rain!'
- (35) *Spanish*
- Y decidió llover a la hora de ir al gym.²⁵
 and decided.3SG rain.INF at the hour of go.INF to+ART.M.SG gym
 'It decided to rain at the time to go to the gym.'

A second context used to justify the argument status of weather-it corresponds to purpose clauses, as per Levin & Krejci's (2019) classification, (36). Since purpose clauses also involve

²⁵ https://twitter.com/soledad_esponda/status/766814354737999872, accessed 1/10/2021.

control, their subjects are also subject to semantic restrictions. In this case too, differences in grammaticality are taken to indicate that weather-it is an argument.

- (36) Levin & Krejci (2019)
- a. That's why it rains [_ to sedate you]. It rains [_ to turn you numb].
 - b. *It only seems that Tracy jogged [_ to annoy us]. (on intended interpretation)

A problem with (36a) is that it does not fit the pattern of a purpose clause, and is better considered a rationale clause²⁶ (albeit a special one given that its meaning is kind of arbitrary; put differently, it falls on the figurative side of the discourse.) Unlike in purpose clauses, the status of control in rationale clauses is not well understood. As Landau (2013) points out there are two possible analyses: a) PRO is controlled by the agent of the matrix clause, and b) PRO is controlled by the matrix event/state as a whole (224). He shows that none of the two options can cover all cases. Regarding (36a), there is no evidence that it includes an agent, so the first option has to be abandoned (at least until the agent status of weather-it has been independently established). If it is the event as a whole what is controlling PRO, then the grammaticality of (36a) may not be the result of the argument status of weather-it. The central point of the argument here is the existence of two options regarding the controller in rationale clauses; thus, it is not possible to conclude that weather-it is acting as a controller (and as a result as an argument) if the properties of weather-it have not been previously validated, and this context is used to validate such properties. Finally, as with constructions that include control verbs, (36b) cannot function as a purpose or rationale clause because *seem* lacks any eventive interpretation.

Imperative constructions are another syntactic context used to argue in favour of the argument status of weather-it. The rationale in this case is that since “the addressee of a felicitous imperative must be an event participant presumed by the speaker to have control over bringing about the event” (Levin & Krejci 2019), then weather-it is an argument because it can be an addressee, (37), while expletive *it* cannot, (38).

- (37) Levin & Krejci (2019)
- a. Please don't rain.
 - b. “Please snow tomorrow. Please...” you whispered.

- (38) Levin & Krejci (2019)
- a. *Please (don't) seem that Tracy jogged.
 - b. *Please (don't) appear that Jordan won the game.

The first thing to note about (37) is that some speakers can only interpret these cases as the result of some kind of personification of the weather. The authors recognize this possibility, but point out that “what matters is that a comparable option is not available to raising verbs” (Levin & Krejci 2019: footnote 11). Although I agree with the idea that (37) and (38) must be distinguished, I believe there is another way to explain the felicity of (37) versus the impossibility of (38), different than both the personification analysis, and the conclusion about weather-it being a possible addressee, which is hard to account for, given its lack of semantic content and referentiality.

An alternative view is that (37) is felicitous because it can be somehow reanalyzed (reinterpreted) given the properties of the predicate *rain*, while (38) cannot. Two properties enable this reanalysis. The first one is that *rain* denotes an event, while *seem* and *appear* do not. The second

²⁶ Examples (i) and (ii), taken from Landau (2013), illustrate instances of purpose and rationale clauses, respectively.

- (i) We bought Mary the dog to play with.
 She called a detective to investigate the affair. (Landau 2013: 222, (432f–g))
- (ii) The boat was sunk to collect the insurance.
 Grass is green to promote photosynthesis.
 Flamingos are pink to attract the opposite sex.
 The house was emptied (in order) to be demolished. (Landau 2013: 224, (440a, d–e, g))

property is that the predicate *rain* by itself is enough to convey the meaning of a raining event. Putting these two properties together, a possibility is the speaker in (37) is simply wishing for a raining event to happen (or not), without the need of having to address anything or anyone in particular. (Some English speakers seem to have this interpretation of (37)). The hypothesis is that if imperatives are created by addressing the agent or the argument that brings about the event, in cases where no such element can be identified, potentially, we can still use an imperative construction and assign some interpretation to it as long as the predicate denotes an event. Under this view, the so-called personification interpretation emerges when an event that has no known element that can bring it about is attributed to some kind of supernatural entity. Note that in a sense this interpretation is secondary and, more importantly, it is possible because of the event-like properties of the predicate. A related hypothesis is that the impoverished English verbal morphology could be behind making the reanalysis easier in this context in English, while languages like French and Spanish show a more complex behaviour given the richer morphology they employ in imperative contexts. Returning to (38), since it does not refer to an event, both options are impossible. As an anonymous reviewer points out, even if the addressee is human the sentence is still ungrammatical, (39), which shows that the construction fails regardless of the properties of *it*.

- (39) a. You seem to have jogged.
b. *Please (don't) seem to have jogged.

The last piece of syntactic evidence to be addressed is the possibility of precipitation verbs to take nominal complements, (40), and also (1b).

- (40) Levin & Krejci (2019)
a. Then the next day it was hailing huge hail for at least 20 minutes.
b. It snowed a foot of new snow that first night.
(1) b. It rained a light rain.

The reasoning in this case is that since these verbs often take objects (and raising verbs do not), by Burzio's generalization they should also take a thematic (i.e., argument) subject (Levin & Krejci 2019). This conclusion, however, rests on two crucial assumptions about the postverbal DP: it bears accusative case and it is an argument. The next section examines the DP properties to find out whether these assumptions can be justified.

3.2 The postverbal DP

The process to determine whether the postverbal DP bears accusative case may become a non-trivial one since English DPs lack case markers, and we have to rely on the combination of the syntactic position of the DP and the existence of an external argument. A problem emerges when the status of the so-called external argument is not clear. Note that the argument in this case becomes circular. A second, but related problem, is to assume that only unergative verbs may take cognate objects (COs), as Levin & Krejci (2019) suggest. As (41) and (42) show, it is possible for what seem to be objects of this type to appear in unaccusative structures in English.

- (41) Jones (1988)
John died a gruesome death.
(42) Kuno & Takami (2004), as in Nakajima (2006)
a. The tree grew a century's growth within only ten years.
b. The stock market dropped its largest drop in three years today.
c. The apples fell just a short fall to the lower deck, and so were not too badly bruised.

One may be tempted to think that (41) and (42) are exceptions, but if we look at other languages this possibility is widely attested. In languages like Hebrew, for instance, COs may appear freely with unaccusative predicates, (43). Since adverb formation is not productive in Hebrew, the modification of a noun from the root of the verb is employed to describe the event (Mittwoch 1998: 327). In Sason Arabic, COs may appear with any type of predicate as well, and they have been analyzed as adverbial modifiers (Akkuş & Özürcü 2017), (44).

(43) *Hebrew* (Mittwoch 1998: 314)
Hu nafal nefila kaša.
he fell falling hard
'He had a heavy fall.'

(44) *Sason Arabic* (Akkuş & Özürk 2017: 3)
çiçak ubs-ma boş kotti ubes.
flower fading-a very bad faded.3M
'The flower faded a bad fading.'

If the possibility of adding a cognate or unselected object is available in the language system, regardless of the type of predicate, one has to wonder to what extent and under what circumstances it would manifest in languages where it is less productive. More importantly, at a theoretical level, this should cast doubt about adopting a one-to-one correspondence between a so-called CO and its argument status. A possibility may be that while in languages like English, in most cases, we find a correspondence between the two, in other cases the interpretational properties of the element should be taken into account to determine its status. In other words, the presence of a CO does not guarantee a specific syntactic configuration.

Returning to the idea that precipitation verbs may take nominal complements, especially COs, an additional problem emerges in English, as there is no agreement about case marking in this context. Three options have been suggested: a) COs are modifiers and do not receive structural case (Jones 1988); b) COs and transitivity objects are no different in terms of licensing (Massam 1990); and c) English has two positions where COs may appear: an argument position and an adjunct position, and all COs bear accusative case (Nakajima 2006). These different and to some extent opposing possibilities reflect the various interpretations that COs may bear depending on the structure, and probably, more importantly, the impossibility of treating them as a homogeneous class. Since the status of the postverbal DP is not clear, in next section I evaluate its properties.

3.2.1 Accusative case

Levin & Krejci (2019) make a parallel between (45a–b), where COs are taken to bear accusative case, and (45c). A nominalization test may be useful to determine whether this is the case.

(45) Levin & Krejci (2019)
a. My 2nd child was like a slug-oozing a constant stream of ooze.
b. there seems to be 1 little spot... that is dripping a little drip.
c. It rained a light rain.

Nakajima (2006) shows that unergative verbs allow the type of nominalization where the CO is accompanied by *of*, preposition that is taken to be the realization of accusative case, (46).

(46) Nakajima (2006: 682)
a. The girl's smile of a genuinely cheerful smile (warmed our hearts).
b. The baby's sleep of a deep sleep (delighted his mother).
c. His dream of a funny dream (is forever unforgettable).

If the examples in (45) correspond to unergative structures, we should expect that they all behave alike with respect to this transformation. As (47) shows, only in the first two cases COs seem to bear accusative case. (47c), on the other hand, is ungrammatical.²⁷

(47) a. My 2nd child's ooze of a constant stream of ooze (worried me).
b. The little spot's drip of a little drip (drove my neighbour crazy).
c. *Its rain of a light rain (bothered the guests). (on intended interpretation)

²⁷ An anonymous reviewer raises the point that for her/him there are no differences in acceptability between (46a–b) and (46c), all options being very marginal. Interestingly, the possibility that all cases are equally marginal could be used to argue that none of the elements in these structures bear accusative case.

While (47c) is ungrammatical, I believe its ungrammaticality argues more against the possibility of weather-it being an argument than against the CO bearing accusative case. Note that once the possessive is dismissed, the sentence improves, (48). One can hypothesize that this is so because, unlike (47a–b), *rain* does not have an argument as its subject but an expletive.

(48) #The rain of a light rain (bothered the guests).

Even though (48) is not fully acceptable, it has a sense of redundancy more than of ungrammaticality. Interestingly, if we add a modifier that induces the process-like (the event) interpretation of the DP *the rain*, as in (48), the sentence improves.

(49) ?The constant rain of a light rain bothered the guests.

Another piece of evidence that points in the same direction comes from *-ing* nominalizations, in which the event interpretation is very salient. An anonymous reviewer notes that with this nominalization, the structure is grammatical, (50). Note that in this case too, weather-it is not included.

(50) The raining of a light rain bothered the guests.

Since in all previous cases the postverbal DP appears as part of the *of*-phrase, a possibility is that it bears accusative case. However, from this property alone, we cannot conclude that precipitation verbs have an external argument. The fact that weather-it is absent suggests that this is so. A possible hypothesis is that this is not an instance of structural case, but some kind of default case that is assigned through a different mechanism. Support for this hypothesis comes from the examples in (51), which show that it is possible for what seem to be COs of some unaccusative verbs to appear in the same type of nominalization.

- (51) Nakajima (2006)
- a. The tree's growth of a century's growth in only ten years (surprised me).
 - b. The apple's fall of just a short fall to the lower deck (relieved me).

Nakajima concludes that COs in (51) bear accusative case, and offers two possible explanations: a) COs are accusative adverbials that get case assigned through a functional maximal projection, and b) these are instances of pseudo-accusative case assigned by the verb that precedes the CO under linear adjacency. While the exact source of accusative case may be unclear, what is clear is that from the presence of a CO, we cannot derive that a verb has an external argument, i.e., a CO does not guarantee the classification of a verb as unergative. Similarly, the fact that a CO bears accusative case does entail that it is an instance of structural case.

3.2.2 Referentiality

One property that has been used to argue in favour of the argument status of COs is their referentiality. Massam (1990) notes that sentences such as (52) have a reading where the object is referential and not predicational (167).

(52) She sneezed a sneeze/danced a dance.

Massam shows that a CO can be referred to by a pronoun in another sentence (53a), and that COs may contain non-restrictive relative clauses with the gap in non-predicate position (53b), features that have been associated with referential DPs.

- (53) Massam (1990: 168)
- a. Mona smiled a tantalizing smile. Penelope noticed it and decided immediately that she would photograph it.
 - b. Mona smiled a sarcastic smile, which John photographed.

If we apply the same tests to precipitation constructions with COs the results are not so clear. Note that unlike in Massam's examples where the pronoun *it* may be interpreted as referring to the CO, *the smile*, in precipitation constructions *it* is interpreted as referring to the event, (54) and (55). In

these cases it seems hard to separate the type of rain from the event of raining, a property that has been extensively noted (Eriksen et al. 2010; Meulleman & Paykin 2016; inter alia).

(54) ??It was raining a light rain. My sister noticed it and decided immediately that she would photograph it/take a picture of it.

(55) ??It was raining a light rain, which my sister photographed.

3.2.3 On the adverbial interpretation of the postverbal DP

The lack of referentiality of the postverbal DP can be related to its special interpretational properties. As mentioned in Section 2, the postverbal DP may receive an adverbial interpretation. In this section, I explain how an adverbial interpretation may emerge in these cases without relying on the differentiation of the syntactic positions in which the elements appear (unlike the solution suggested in Nakajima (2006)). The main reason for a non-syntactic explanation is there seems to be no difference between the structures of (56a) and (56b).

- (56) a. It's raining a light rain.
b. It's raining a cold rain.

Ruwet (1987) and Paykin (2010) note that the postverbal DP in precipitation constructions may bear an adverbial interpretation in French. (57) illustrates this property in English. The same pattern is also attested in Spanish. (See [Table 1](#) for relevant examples.)

- (57) a. It rained a light rain.
b. It rained lightly.

We can propose that the adverbial interpretation emerges because the property expressed by the modifier is extended to the event that the verb denotes. This is only so when there is compatibility between such a property and the properties encoded in the event. Paykin (2010) also points out the need of compatibility for an adverbial interpretation to emerge.

There are two ways to implement this idea. The first one is to propose that since the DP *rain* has an event interpretation, as illustrated in (58), it is possible that the property of its modifier extends over to the event that the whole predicate denotes. Massam (1990) suggests something similar for COs of verbs like *dance* and *sing*.

- (58) a. The rain began at ten.
b. The constant rain in the summer damaged the crops.
c. During the rain last night, I saw some critters in the garden.

A second way to obtain an adverbial interpretation is to extend the property of the modifier to the event that the verb denotes as long as it is compatible with it via entailment. Ruwet (1987) notes that sentences in (59) describe the same events and have the same truth values, thus (59a) entails (59b). Since there are two ways to express the same meaning, a possibility is that we derive the adverbial flavour of the DP in (59a) by making a parallel with an entailment that includes some kind of adverbial modification, an adverb as in (57b), or a PP that expresses manner, (59b).

- (59) *French* (Ruwet 1987: 328)
a. Il a plu de grosses gouttes.
EXPL rained.3SG of big drops
b. Il a plu à grosses gouttes.
EXPL rained.3SG at big drops
'It rained heavily.'

In both cases, the adverbial interpretation of the DP is a post-syntactic or pragmatic effect. Regardless of which of the two options is preferred, both allow us to derive the adverbial interpretation that some of these DPs bear, and to maintain that sentences that include a postverbal DP have the same structure, even though some of them may have an adverbial interpretation while others do not.

3.3 Interim summary

From the data analyzed and the discussion developed in this section, two related conclusions emerge. First, the argument properties of weather-it and the DP that appear in precipitation constructions in English cannot be justified either syntactically or semantically. Second, some of the standard methods used to determine the argument status of syntactic elements seem to be inadequate to handle this type of data.

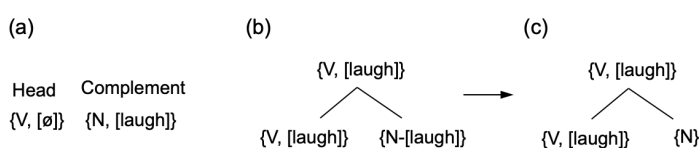
A careful examination of the syntactic evidence revealed that the longstanding claim about the argument status of weather-it cannot be maintained. Although at first sight weather-it seems to behave like an argument regarding its distribution in some syntactic contexts, once the full interpretation and the syntactic and semantic properties of the constructions are taken into account its argument properties dissolve. The behaviour of control verbs proved to be quite informative in this case. While weather-it may appear with control verbs, their interpretation in such cases is equivalent to that of aspectual verbs. As aspectual verbs are ambiguous between raising and control structures, the argument that control verbs impose semantic restrictions on their subjects needs to be evaluated taking into account the interpretation of the verb in the specific construction in which it appears. As noted before, a theoretical problem regarding the status of weather-it is that it may be impossible to establish whether its syntactic behaviour is due to its intrinsic properties or to the fact that it occurs with a predicate that denotes an event. This fact, however, has been systematically overlooked. Regarding the DP, it was demonstrated that its interpretational and syntactic properties fall short of securing its argument status. Finally, some theoretical assumptions like the idea that COs are restricted to unergative verbs and accusative case marking is an indication of argumenthood make the wrong predictions in this case too.

Overall, the previous discussion shows that if the interpretational component is not considered or if we do not triangulate all possibilities, precipitation constructions fall through the cracks, and the characterizations that we obtain do not exactly describe them. One way to account for their behaviour is to treat them as an exception. Another option is to concede that they are a possible outcome of the system, but the model of the architecture of the grammar, from which some of the previous theoretical assumptions emerge, is not appropriate. In the next section I argue for the latter.

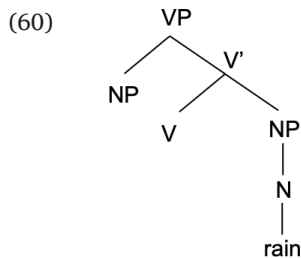
4 Precipitation constructions and their components: an alternative analysis

Since neither the DP nor the pronoun can be categorized as arguments, the next question that we have to answer is how do we account for their presence in precipitation constructions? I will leave aside for a moment the pronoun, which can be taken as a general language requirement, and focus on the DP. As suggested at the beginning, one hypothesis is that precipitation verbs are denominal verbs (Hale & Keyser 1991); thus, the possibility of a DP from the same root of the verb to appear in the construction may emerge from their underlying structure. This by itself, however, does not explain the properties of these constructions, or their elements. Actually, Hale and Keyser's structure for weather verbs, (60) (1991: 22), makes the wrong predictions regarding the properties of the elements that appear in it.²⁸

²⁸ According to Hale and Keyser, "weather verbs are, by hypothesis, object confluents (...). Thus, *rain* is derived by conflation of the N *rain* from the internal or object, argument position" (1991: 21–22). At this point Hale and Keyser treat the terms incorporation and conflation as equivalent. In subsequent work, they refine their theory and propose that unergative verbs in English are the result of incorporation (i.e., head-movement). Later, they abandon this idea, and argue they are formed via conflation, which consists of copying the phonological material (p-signature) from the complement into an empty (phonologically defective) V-head, leaving the complement position devoid of any material, as illustrated below (Hale & Keyser 2002: 62–63).



Among the problems that they intended to solve was the apparent contradiction that generated a hyponymous object in such structures, e.g., *Rose danced a waltz*. As Haugen (2009) shows, it is possible to maintain that unergative verbs are formed via incorporation if we treat movement as Copy, and adopt the notion of Late Insertion from Distributed Morphology.



Since their framework maintains the standard assumption that the element that is merged in the complement position of the verb is an argument, the NP in (60) is an argument. Second, given the relation between NP and the verb, the verb-complement configuration in this case implies that precipitation verbs have an external argument similar to unergatives like *laugh*, *sleep*, *run*, etc. Hale & Keyser (1991), aware of the problem that arises from the presence of an expletive at surface structure in precipitation constructions, suggest two possible solutions: the subject of precipitation verbs is a true subject selected by the verb, or the subject position is empty; thus, *rain* is unaccusative.²⁹ Unsurprisingly, the first solution is the same as the reasoning found in Levin & Krejci (2019). The second solution corresponds to the analysis of precipitation verbs in French developed by Ruwet (1987), which, as Paykin (2010) shows, is not correct either. Overall, the two options demonstrate that this model of the architecture of the grammar either leaves out precipitation constructions or makes the wrong predictions about them. Thus, even though it accommodates most instances, it may not be correct.

I am aware that precipitation verbs constitute a rather small set, but if we look at this problem from the arguments' perspective, the possibility that there are verbs that lack arguments does not seem exceptional, providing that they by themselves are sufficient to convey the meaning of the event that they encode.³⁰ An additional property of precipitation constructions that this model cannot accommodate is the existence of cases like (1c), repeated as (61). In this case the DP *a light rain* occupies the subject position, a position associated with arguments, but if the DP is not an argument of the verb, how is (61) derived?

(61) A light rain rained over the city.

Crucially, constructivist models of the architecture of the grammar can handle the dual behaviour that the DP displays in precipitation constructions. Since, in these models, arguments are merged in specific functional projections that determine their argument status, and, to some extent, their interpretation, it is possible for the DP in (61) to be merged in a non-argument position first and then to be remerged in a position associated with arguments. Thus, in this work, I will only maintain the spirit of Hale & Keyser's (1991) analysis—the fact that precipitation verbs are derived from the incorporation of a nominal root into an abstract verbalizing head—and combine it with a constructivist approach.

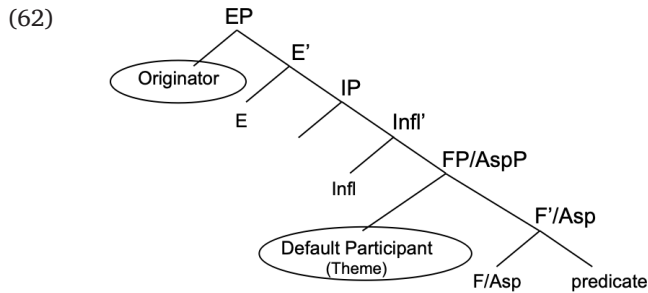
The specific constructivist model that I adopt is the one proposed in Borer (2005). The main reason is that it espouses the so-called naked root approach, which straightforwardly accommodates the fact that precipitation verbs have no arguments.³¹ In Borer's framework, roots are not associated with any syntactic content (e.g., syntactic category or argument structure). The position where they are merged in the structure determines their syntactic category. As in other constructivist models, the projection of arguments is based on event structure. Her model includes an event phrase (EP), a functional projection located above IP that establishes a mapping from predicates to events (Borer 2005: 82). The element that appears in the specifier of EP is the argument that may receive the interpretation of the originator of the process. However, such interpretation emerges by entailment; thus, the projection of EP does not imply the existence of an originator (Borer 2005: 83). By the same token, merging an

²⁹ They mention two possible arguments in favour of the first option: Bolinger's (1973) proposal about "ambient it", and the idea that weather-it can be involved in control. (Both already discussed.)

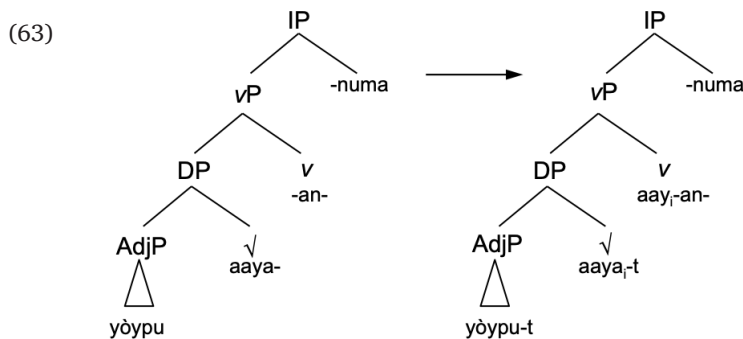
³⁰ A Non Argument Theory (NAT) is suggested by Williams (2005) on the basis of the behaviour of resultative constructions in Igbo and Mandarin.

³¹ Although the model developed in Ramchand (2008) is quite attractive because it focuses on verbal meaning, some modifications need to be made to accommodate the fact that precipitation verbs have no arguments.

element in the specifier of EP does not make it an originator.³² The other functional projection (FP) where an argument is merged is the Aspect Phrase (AspP), which is related to telicity and accusative case marking. The exact properties of this projection are not relevant for our analysis; what matters is that it is the locus where the default participant, the argument linked to the theme interpretation, the one that undergoes some kind of change, is merged. (62) depicts the structure that will be used in this work.

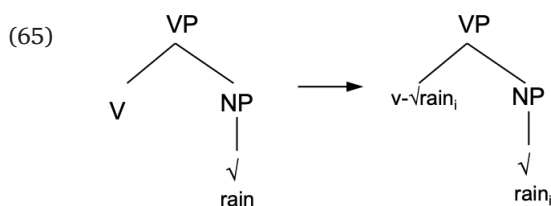


Before providing the relevant derivations, a last theoretical detail should be pointed out. In this work, I adopt Haugen's (2009) revision of Hale & Keyser's (2002) proposal of incorporation, whose central features are the treatment of movement as Copy and the adoption of the idea of late insertion from Distributed Morphology. As Haugen argues, treating movement as Copy allows us to leave a copy of the moved item in its original merging position, which is essential for the possibility to spell out a nominal related to the verb. Additionally, it allows us to maintain the identity between the two copies via co-indexation without breaking the chain. This along with the idea that morpho-phonological material is inserted post-syntactically (late insertion) allows the option to spell out different lexical items in the two copies, making possible the insertion of a non-cognate nominal into the lower copy. This is possible because the encyclopedic information attached to roots is irrelevant to the syntax (Haugen 2009). (63), from Haugen (2009), illustrates the incorporation process in Hopi, as in the CO construction in (64). He suggests that (63) can be extended to English, which is exactly what we do in (65).



(64) *Hopi* (Haugen 2009)
 Hak yòyphu-t aayya-t aay-an-numa
 who cracked.ACC rattle.ACC rattle.CAUS.CIRCG
 'Someone's going around shaking a cracked rattle.'

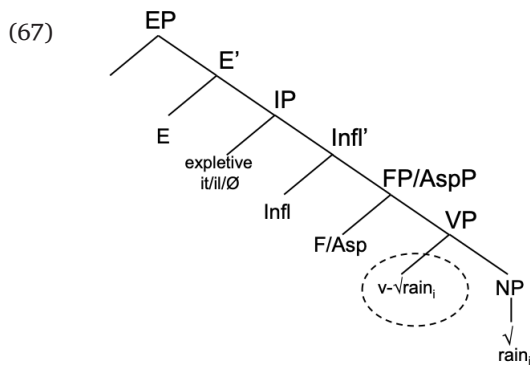
(65), corresponds to the VP of examples in (66), in English, French, and Spanish. As can be seen, the $\sqrt{\text{rain}}$ is copied onto the v to form the (denominal) verb *rain*. The representation v- $\sqrt{\text{rain}}$, which includes a "v", is used to make the structure more transparent. Likewise, I am not committed to the insertion of any lexical content in the root and the use of *rain* is just for illustration.



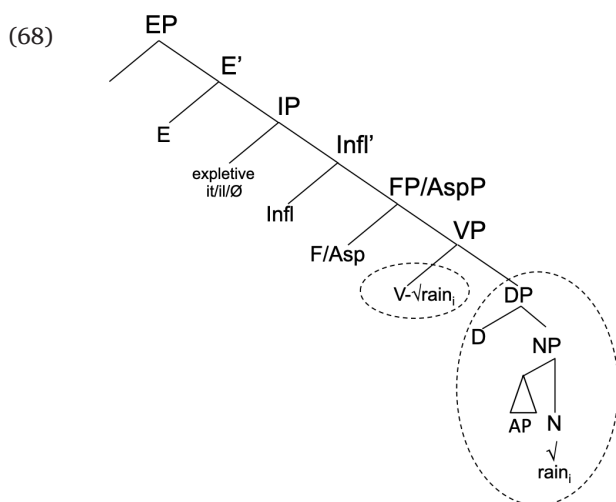
³² This treatment makes the right predictions with respect to the interpretation of the elements that appear in both non-metaphorical and metaphorical precipitation constructions.

- (66) a. It rained.
 b. Il a plu.
 EXPL rained.3SG
 c. Llovió.
 rained.3SG

The insertion of the expletive proceeds at the IP layer as a sentence requirement (e.g., nominal feature) in the three languages alike. The only difference is that in English and French its realization is overt, while in Spanish it is covert. Language internal motivation for proposing a null expletive in Spanish comes from differences in agreement patterns between non-metaphorical and metaphorical precipitation constructions with postverbal DPs, as suggested in Section 2.1. However, the analysis developed here does not depend on the existence of a null expletive. The same agreement facts can be captured with further specifications on the Infl head regarding phi features in so-called default environments. (What matters is that there is no argument in this case.) (67) includes the complete derivation. Note that the specifier of the intermediate FP related to the theme argument does not project in this case. Additionally, only the incorporated copy, the one that forms the verb, is spelled out. We might argue that, in this case, the NP is defective, i.e., it has less syntactic functional structure; thus, the copy associated with it is not pronounced. (Functional projections that are not relevant for the analysis are not included in the derivations. Likewise, verb movement is not represented.)



(68) represents the actualization of (67) when a DP from the same root of the verb or a hyponym is included. In this case, unlike (67), the lower copy of the root is also spelled out, as in (69), English, French and Spanish, respectively. These cases are analogous to Haugen's example in Hopi.³³



³³ An issue emerges from (68) and the idea that phonological material is inserted after the syntactic derivation finishes (Late Insertion). The same point applies to Haugen's (2009) proposal. Note that since hyponyms do not require modification, we may need to differentiate between structures where a hyponym with no modification is spelled out and those where a nominal from the same root that requires modification or a modified hyponym are spelled out. This should not be a problem though, as constructions where a nominal from the same root without modification are also attested: *The wind blows and the rain rains*. Thus, we can propose in these cases as in the ones where a hyponym without modification appears no AP is included in the structure.

- (69) a. It rained a light rain.
 b. Il a plu une petite pluie fine.
 EXPL rained.3SG a small rain fine
 c. Llovía una lluvia fina.
 rain.IPFV.3SG a rain fine

Notice that an AP has been added to the structure.³⁴ However, its presence is not a structural requirement (e.g., part of a more complex structure like a small clause). Note that while it is the case that DPs that share the same root as the verb appear with a modifier in the three languages, when the DP is a hyponym no modification is required, (70). Thus, if we are proposing that both instances correspond to the same structure, then the presence of the adjective cannot be taken to be the result of a more complex structure.

- (70) a. It rained a (light) drizzle all afternoon.
 b. Esa tarde, llovió aguanieve.
 this afternoon rained.3SG sleet
 ‘It rained sleet this afternoon.’

Regarding the adjective, we might argue that when there is an identity between the verb and the DP (i.e., when both share the same root), the spelling-out of two identical copies would be redundant. Thus, cases that do not include modification like (71) are filtered out at LF. These sentences, however, are not ungrammatical.

- (71) #It rained a rain.

Massam (1990) offers a similar explanation for (72). She proposes that “since the lexical entry for the intransitive verb [...] and the lexical entry for the CO verb derived from it are logically related, they are truth conditionally the same” (182). Thus (72a) does not add any new information with respect to (72b).

- (72) Massam (1990: 182)
 a. #Ginger dreamed a dream.
 b. Ginger dreamed.

Crucially, this requirement is not universal. As Haugen (2009) suggests, “restrictions on hyponymous and cognate objects may depend on language-specific pragmatic conditions, relating to the avoidance of redundancy (Grice’s Maxim on Quantity)” (260). A potential piece of evidence for this hypothesis comes from languages where the lower copy without modification is spelled out. Haugen (citing Klaiman 1990) provides two examples in Hindi where the unmodified copy must be spelled out: *khaannaa khaa-* food-eating and *gaanaa gaa-* song-singing. Examples of precipitation constructions that seem to follow a similar pattern are found in Eriksen et al. (2010). For instance, these authors note that in Turkish the verb *yağmak* is used for precipitation events in general. However, unlike in Finnish where the DP is dropped when it refers to rain, in Turkish it is usually realized, (73). Other cases are (74) and (75), in Mwotlap and Bislama, respectively.

- (73) *Turkish* (Eriksen et al. 2010: 591)
 Yağmur yağ-iyor.
 rain rain.PROG.PRES.3SG
 ‘It is raining.’
- (74) *Mwotlap* (Eriksen et al. 2010: 592)
 Na-smal me-smal.
 ART.rain PFV.rain
 ‘It is raining.’

³⁴ Although the AP appears in a specifier position in (68), the analysis proposed here does not capitalize on the position of the AP, meaning that it can also be merged in the complement position of the NP. See Alexiadou (2001) for the need of the two positions.

- (75) *Bislama* (Eriksen et al. 2010: 592)
Ren bae i ren.
rain FUT PRED rain
'It is going to rain.'

The last construction that concerns us is (1c), repeated as (76), where the DP appears as the subject.

- (76) A light rain rained over the city/on us.

As in the previous context, the modification of the DP in (76) is not the result of structural requirement, but an interpretational or pragmatic one. Since the DP occupies a higher position than the VP in the structure, i.e., it takes the VP as its predicate, a predicative relation is established between the two. The oddness of cases that do not include modification arises because the DP and the verb are logically related; thus, the predicative relation is not interpretable. This is also a case of redundancy, compare (77) and (78), which includes a hyponym and no modification is required.

- (77) #A rain rained over the city/upon them/on my head.

- (78) A drizzle was raining over the city/upon them/on my head.

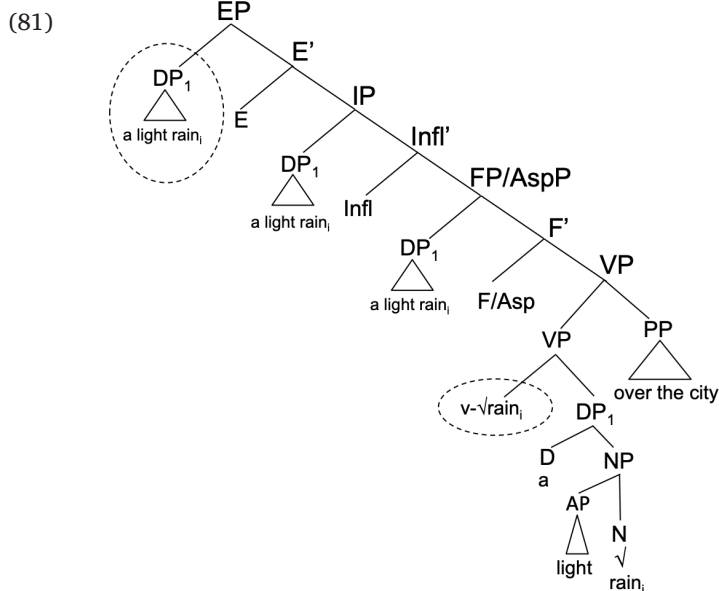
Additionally, one can hypothesize that the presence of the postverbal PP in this context could also be linked to the impossibility to interpret this predicative relation. Since the DP and the verb are logically related and the predicate does not include anything but the verb, the predicative relation turns out to be vacuous, (79). Thus, descriptively, we can say that the inclusion of the PP allows us to extract some meaning from these constructions.

- (79) #A light rain rained.

As a side comment, notice that under special informational conditions, as in (80), from Gardelle (2015: footnote 19), it is possible for the DP to appear with no modification. Moreover, a PP is not required in the predicate. Thus, the grammaticality of (80) can be taken as evidence that the presence of the DP modifier and the PP are not structural but interpretational or pragmatic requirements. The possibility to spell out a hyponym without modification goes in the same direction.

- (80) Gardelle (2015)
Then one day you get out where the sun shines and the rain rains and the snow
snows and it all comes together.

Turning back to (76), note that it could be paraphrased as 'a light rain fell over the city'. This is similar to the interpretation found in metaphorical constructions. However, even though it may look like there is a bleaching process taking place in this case too, I think it is actually the combination of the structural configuration and the specific elements that appear in the structure what makes it as if there were one. In any case, the interpretation is similar to a light verb construction, except that, in this case, the process works in reverse: part of the verb meaning seems to be bleached, and only the dynamic part, i.e., the movement interpretation, is preserved. As a result, the verb (the predicate) works as a placeholder of the subject DP, which now carries the information about the substance that is part of the event, and has an argument-like function. Derivationally, we can capture this by remerging (copying) the DP into the specifier of the Functional Projection (FP) related to the theme argument. Then the DP then raises to fulfil other clause requirements like the EPP (and licensing the Event variable in EP), and receive or value case (depending on the approach). As standardly accepted, the higher copy of the DP is spelled out, as shown in (81).



Before finishing this section, I would like to call the reader's attention to two related issues. The first one is that in the initial examples there are no French or Spanish counterparts of (76). One property that has been systematically noted about non-metaphorical precipitation constructions in French is that the DP does not move to the preverbal field (Ruwet 1987; Paykin 2010), (82).

- (82) *French* (Ruwet 1987: 324)
 ?Une petite pluie fine a plu toute la journée.
 a small rain fine rained.3SG all the day

However, examples with a DP that could be analyzed as an ellipsis of a phrase that contains the noun *rain* (DP: *Des grosses gouttes (de pluie)*, similar to the compound *raindrops* in English) are possible in French, (83).

- (83) *French* (Ruwet 1987: 334)
 De grosses gouttes nous pleuvaient dessus.
 of big drops us.CL.1PL.DAT rain.IPFV.3PL upon
 'Big raindrops were raining on us.'

The acceptability of (83) should make us wonder whether movement to the preverbal field is impossible or if it is just infrequent in French. A similar point can be made about Spanish. Although examples like (84) are probably difficult to find in corpora, they cannot be ruled out as ungrammatical.

- (84) *Spanish*
 ?Unas gotas grandes (#de lluvia) nos llovieron encima.
 some drops big of rain us.CL.1PL.DAT rained.3PL upon
 'Big raindrops rained on us.'

Thus, the relevant question is why there may be a lack or low frequency of this configuration in French and Spanish. The tentative answer that I am going to offer is that this behaviour is related to more general properties of these languages. Generally speaking, both French and Spanish allow postverbal subjects with so-called unaccusative verbs, a configuration that carries athetic interpretation. Since the two options are possible in these languages, when the DP is realized preverbally the structure is interpreted about it. However, given that the two possibilities exist and given the properties of the predicate (specifically the fact that verb and the noun are related), DPs in precipitation constructions are not good candidates to be realized preverbally. One can speculate that since in Spanish and French the realization of a DP in the preverbal field in some contexts carries some interpretation, in instances where the two options exist, preverbal realization would be more frequent, or limited to interpretable cases. Since movement to the specifier of inflection happens across the board in English (only a group of

unaccusative verbs allows there-insertion), this type of structure is probably less marginal in English. This last point brings us to the second issue: are there any differences between (85a) and (85b)? Can we take them to represent some type of alternation?

- (85) a. It rained a light rain (on us).
b. A light rain rained *(on us).

Although these questions are from trivial, based on the previous discussion, I believe the short answer to the second question is no. The way I see it, (85a) and (85b) are two possibilities that emerge from the combination of the properties of precipitation verbs and the specific properties of English. Thus, the two options are, in a sense, equivalent. The fact that the truth conditions of the sentences are the same is compatible with this hypothesis. Even though it could be argued that in order to obtain (85b) more information is needed, I am not sure whether we can identify the exact source of such a need. The possibility that (85b) is interpreted about the DP, while (85a) is athetic judgement is not easily demonstrated either. Note that both sentences seem to be possible in a context where two people with slightly wet clothes arrive at a friend's house and are asked about what happened to them. This is a scenario where a broad focus statement would be felicitous, which takes us back to the ambiguity that is found in English with respect to the interpretation of preverbal subjects.

I think that the closest we can get to find a possible difference between the two options is to take the structures in isolation and focus on the fact that the PP is not required in one of the cases. Thus, we can propose that (86a) is compatible with a context where less information needs to be provided, e.g., there was a raining event and the rain was light. In this case the location of the event is probably known by the interlocutors.

- (86) a. It was raining a light rain (over the city).
b. A light rain was raining *(over the city).

Yet, it might be argued that the fact that the PP is a requirement in (86b) but not in (86a) makes a strict comparison between the two sentences unattainable. Likewise, the idea that the interpretation of the verb is to some extent different in the two cases seems to go against the possibility of comparing the two sentences. Overall, the behaviour and the interpretation of precipitation constructions and their components suggest that they cannot be assimilated to other instances in the language. Moreover, if we take their different instantiations as a possible output and not as an exception, it is possible to argue that they offer support for a constructivist model of the grammar, one where not only arguments are merged in specific functional projections, but also roots are devoid of any syntactic information.

5 Conclusions

Taking non-metaphorical precipitation constructions as a case study, I have shown that, in some cases, to obtain an accurate characterization regarding an element's argument status, both the general interpretation of the structure in which the element appears, and the interpretational properties of the element(s) need to be considered along with traditional methods of syntactic analysis. Specifically, it was demonstrated that the syntactic distribution of weather-it, if taken in isolation, proves to be an insufficient diagnostic tool of its argument status. Moreover, the use of methods that combine syntactic distribution and semantic requirements may give us the wrong idea that meaning is being taken into account. To this end, the behaviour of control verbs was quite revealing. Although weather-it is compatible with a number of control verbs, their interpretation in such contexts corresponds to that of aspectual verbs. A general conclusion that emerged from most contexts analyzed is that the eventive nature of the predicate in which weather-it occurs may be the source of its spurious argument behaviour, a fact that has been largely overlooked.

I have also shown that some theoretical assumptions that derive from a fairly standard representation of the architecture of the grammar within the generative framework make the wrong predictions regarding the characterization of both weather-it and the postverbal DP in non-metaphorical precipitation constructions. This, I believe, speaks in favour of the need for a more articulated architecture of the grammar. Additionally, the fact that the DP that appears in

non-metaphorical constructions displays a dual behaviour regarding its argument status (which correlates with the positions in which it is realized in the structure) provides support for a constructivist model of the architecture of the grammar, one where verbs (more specifically, roots) are not linked arguments. Finally, although this study focused on non-metaphorical constructions, the properties and interpretation of metaphorical constructions also point in the same direction. Note that the meanings that emerge in such cases clearly depend on the combination of the elements introduced in the structure and the syntactic positions that they occupy which suggests that meanings are indeed built in the syntax.

Abbreviations

1 = first person, 3 = third person, ACC = accusative, ART = article, CAUS = causative, CIRCG = circumgressive, CL = clitic, DAT = dative, EXPL = expletive, FUT = future, INF = infinitive, IPFV = imperfective, PFV = perfective, PL = plural, PRED = predicative, PROG = progressive, PTCP = participle, SG = singular

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Competing interests

The author has no competing interests to declare.

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