

# Why Does IT Always Rain on Me? On Weather Verbs

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The aim of this article is to discuss a possible argument structure representation for weather verbs (*to rain, to snow, to thunder* a.o.) in the framework proposed by Hale and Keyser (2002). Starting from the idea that weather verbs sometimes take Agents as subjects, and sometimes Themes, we would like to propose that they can be decomposed either as V+N (*rain* = ‘FALL RAIN’), or as CAUSE followed by V+N (‘CAUSE [FALL RAIN]’). The article brings cross-linguistic evidence in favor of this proposal, showing that weather verbs in languages across the world display an ambiguous behavior, sometimes behaving like unaccusatives, and sometimes like unergatives.

Keywords: *ambiguity, decomposition, incorporation, unaccusativity, weather verbs*

## 1 Aim

Believers or non-believers, we cannot help but remain a bit dazed and confused when we start to think about what lies behind the *it* in sentences like *It rains.* or *It snows*, an *it* which is missing in *pro*-drop languages. Is it the snow that falls or is there something or someone that causes the snow to fall?

The aim of this paper is to present a possible argument structure representation for weather verbs, and to discuss the semantic and syntactic status of their subject. Starting from the intuition that a verb like *rain* has the meaning ‘fall rain’, an intuition which is validated by the existence of numerous such explicit paraphrases across languages, the paper assumes the framework proposed by Hale & Keyser (2002), suggesting that weather verbs should be decomposed as: V+N (*rain*= ‘FALL RAIN’).

An important remark is in order, namely, that, while, in some languages (English, German, French, Spanish, Italian a.o.), such paraphrases are auxiliary means of referring to the weather, in addition to weather verbs, in other languages, like Chinese, where there are no weather verbs, they represent the only means of referring to the weather. We thus aim to test the viability of our proposal cross-linguistically, by looking both at languages which have weather verbs, and at languages which lack them.

In doing so, however, we take into account the fact that, even in languages which do have weather verbs, there are various other ways of talking about the weather, apart from weather paraphrases such as *Tombe la pluie* (‘Falls the.FEM.SG rain.FEM.SG’), namely: (i) impersonal constructions (*Piove* (Italian, ‘Rains’), *It rains*), (ii) extraposed ‘subject’ constructions (*Il a plu toute la journée une petite pluie fine* (French, ‘EXPL has rained all.FEM.SG the day a.FEM.SG little.FEM.SG rain smooth.FEM.SG’, *It rained a heavy rain*), and (iii) agent constructions (*The Lord thundered from heaven*, *He rained his tears on me*). So as to further refine the argument structure representation proposed for weather verbs, the paper goes on to test if weather verbs are unaccusative or unergative, i.e., if their subject is to be understood as a Patient or as an Agent. In other words, what is of interest is whether, in

a sentence like *It rains*, it is the rain that rains or, rather, a higher force (the sky/God), a question that has been present ever since Antiquity, as these lines from Aristophanes show (Clouds, 367-368):

“**Socrates:** *What Jupiter? Do not trifle. There is no Jupiter.*  
**Strepsiadés:** *What do you say? Who rains then?*” (Ruwet 1991)

We look at how weather verbs behave with respect to unaccusativity tests across languages, showing that sometimes weather verbs behave like unaccusatives and sometimes like unergatives, which leads to their decomposition either as [FALL N] or [CAUSE [FALL N]], and not just as [FALL N].

## 2 The Data

We will start our cross-linguistic analysis by examining the data, looking at weather verbs in Germanic and Romance languages.

### 2.1 Weather Verbs in Germanic languages

#### 2.1.1 Weather Verbs in English

In English, which is a non-*pro*-drop language, we encounter (a) weather verbs which take as subject the expletive pronoun *it*, such as *to rain* (*It rains*), *to snow* (*It snows*), *to hail* (*It's hailing*), *to drizzle* (*It's drizzling*), (b) weather verbs which take a nominal as subject, such as *to blow* (*The wind is blowing*), *to shine* (*The sun is shining*), and (c) weather verbs which take as subject either the expletive *it* or a nominal (*the rain*), such as *to pour* (*It's pouring/ The rain is pouring*).

In the cases (b) and (c), the nominal occupying the subject position is not an Agent, but it can very well be an Agent in case the verb is used transitively: *God will rain a heavy rain on you if you don't start smiling* (transitive structures), *whenever God shines His Light on me* (Van Morrison).

#### 2.1.2 Weather Verbs in German

In German, there are (a) weather verbs which take an expletive pronoun, such as *regnen*, ‘to rain’ (*Es regnet heute* ‘It rains today’, meaning ‘It is raining today’), *schneien*, ‘to snow’ (*Es wird morgen schneien* ‘It will snow tomorrow’), *blitzen* ‘to flash’ (*Es blitzt und donnert* ‘It flashes and fulminates’), ‘to hail’ (*Es hagelt* ‘It hails’), ‘to drizzle’ (*Es nieselt* ‘It drizzles’), and (b) weather verbs which take a nominal as subject, such as *wehen*, ‘to blow’ (*Ein heftiger Wind weht* ‘A heavy wind blows’), *scheinen*, ‘to shine’ (*Die Sonne scheint* ‘The sun shines’).

In colloquial German, an interesting phenomenon occurs, namely, (1) alternates with (2):

- (1) *Es regent schon wieder*  
it rains already again  
‘It is already raining again.’

- (2) *Das regnet schon wieder!*  
 this rains already again  
 'It is already raining again.'

(1) is the neutral way of talking about the weather; the subject *es* 'is' the standard German expletive pronoun that also shows up in constructions such as *Es gibt Probleme* (it gives problems, 'There are problems') or *Es wird getanzt* (it is danced, 'One dances'). In (2), *es* 'is' replaced by the demonstrative pronoun *das*. (2) expresses strong negative feelings about the weather (and those living in Central Europe know why), and cannot be used as a neutral statement. The construction is restricted to atmospheric predicates. It may also express surprise:

- (3) *Das regnet ja nicht mehr!*  
 this rains particle no longer (yesterday's standard utterance)<sup>1</sup>  
 'It no longer rains.'

### 2.1.3 Weather Verbs in Dutch

Dutch has a system similar to German in that *het* and *dat* can alternate (both being translations for English 'it' as in 'it rains', but the latter being emphatic). However, this alternation is found in Dutch dialects, not in standard Dutch. The use of *dat* is absolutely impossible in the standard language (ABN = Algemeen Beschaafd Nederlands).<sup>2</sup>

### 2.1.4 Weather Verbs in Icelandic

Hoeskuldur Thrainsson points out that in Icelandic, one can either have the regular dummy *það* 'it, there' or *hann* 'he'. There are differences between the regular expletive and this weather-*he*<sup>3</sup>: a stylistic difference between the two, the latter being somewhat more colloquial, a clear syntactic difference, and semantic difference - somewhat similar to the difference between the use of *es* and *das* in impersonal constructions in German. A sentence like (4) would be more neutral than (5), the latter expressing negative feelings about the weather.

- (4) *Það er faridb að rigna*  
 it is started to rain  
 'It's raining.'

- (5) *Hann er farinn að rigna*  
 he is started to rain  
 'Oh, sh\*t, it's raining again!'

A possible explanation for this could be that, when rain (snow, etc) bothers people, they need someone to get angry with; by using the personal pronoun *hann* 'he' instead of *það*, they make up an enemy (God?).

<sup>1</sup> Jan Olsen, <http://linguistlist.org/issues/2/2-340.html>

<sup>2</sup> <http://linguistlist.org/issues/2/2-340.html>

<sup>3</sup> <http://linguistlist.org/issues/2/2-338.html>

The difference in meaning is not clear; (4) can also have a negative meaning, and (5) can be a neutral statement, but, insofar as there is any difference, *hann* is more negative than *thadb* in weather constructions.<sup>4</sup>

## 2.2 Weather Verbs in Romance languages

### 2.2.1 Weather Verbs in Italian

Italian is a *pro*-drop language, so we find (a) weather verbs which take *pro* as subject, such as *piovere* 'rain' (*Piove* 'Rains'), *nevicare* 'snow' (*Nevica* 'Snows'), *grandinare* 'hail' (*Grandina* 'Hails'), *piovigginare* 'drizzle' (*Pioviggina* 'Drizzles'), and (b) weather verbs which take a nominal as subject, such as *soffiare* 'blow' (*Il vento soffia*, 'The wind blows.'), *brillare* 'shine' (*Il sole brilla*, 'The sun shines').

In Italian, we can use two possible constructions with weather verbs: 'fare + weather expressions (N, A)' (6), 'essere + weather expression' (*c'è*) (7):

- (6) a. *Che tempo fa?*  
 what weather makes  
 'How is the weather?'
- b. *Fa bel tempo.*  
 makes beautiful weather  
 'The weather is nice.'
- c. *Fa cattivo tempo.*  
 makes bad weather  
 'The weather is bad.'
- d. *Ha fatto caldo.*  
 has made warm  
 'It has been warm.'
- e. *Qui fa sempre freddo.*  
 here makes always cold  
 'It's always cold here.'
- f. *In primavera fa sempre fresco.*  
 in spring makes always cool  
 'In spring it's always cool.'
- (7) a. *Oggi c'è il sole.*  
 today there.is the sun.  
 'It is sunny today.'
- b. *Fa caldo.*  
 makes warm  
 'It is warm.'
- c. *BRRR... Mamma mia, ma c'è un freddo bestiale là fuori !!!!!*  
 Brrr... Mother my, but there.is a cold terrible there outside.  
 'Brrr... mamma mia, there's a terrible cold outside.'

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<sup>4</sup> <http://linguistlist.org/issues/2/2-340.html>

### 2.2.2 Weather Verbs in Spanish

In Spanish, another *pro*-drop language, we find (a) weather verbs which take *pro* as subject, such as *lluvia* ‘rain’, *nieve* ‘snow’, *tronar* ‘thunder’ (*Truena* ‘It is thundering/It thunders’), *llover* ‘drizzle’ (*Lloviendo* ‘It is drizzling/It drizzles’), and (b) weather verbs which take a nominal as subject, as in *El viento sopla* ‘The wind blows’ (meaning ‘The wind is blowing’), *El sol brilla*. ‘The sun shines’ (meaning ‘The sun is shining’).

Spanish disposes of three possible weather constructions: using the verb *hacer* ‘make’ (8), the verb *hay* ‘be’ (existential) (9), the verb *estar* ‘be’ (10):

- (8) a. *Hace frío.*  
makes cold  
‘It’s cold.’  
b. *Hace calor.*  
makes warmth  
‘It’s hot.’  
c. *Hace sol.*  
makes sun  
‘It’s sunny.’  
d. *Hace fresco.*  
makes cool  
‘It’s brisky.’
- (9) a. *Hay niebla.*  
is fog  
‘It’s foggy.’  
b. *Hay sol.*  
is sun  
‘The sun is shining.’  
c. *Hay nubes.*  
is clouds  
‘It’s cloudy.’  
d. *Hay granizo.*  
is hail  
‘It’s hailing.’
- (10) weather expressions that use the verb ‘*estar*’ along with an adjective:  
a. *Está oscuro.*  
is dark  
‘It’s dark.’  
b. *Está nublado.*  
is cloudy  
‘It’s cloudy.’

These three verbs behave differently in syntax, and they are used for different purposes. While the first two verbs are followed by nominals, *estar* takes adjectives as complements. The difference between *Hace sol.* and *Hay sol.* would be that the first has a causative component in its meaning (although no explicit cause is present), while the second does not. As for the difference between the ‘be’ verbs, while *hay* in *Hay nubes* ‘It

cloudy' is existential, *está* in *Está nublado* 'It's cloudy' is predicative (it even takes an adjective as a complement instead of a noun).

### 2.2.3 Weather verbs in French

Weather verbs in French take an expletive as subject: *pleuvoir* (*Il pleut*, 'It rains'), *neiger* (*Il neige*, 'It snows'). French also makes use of weather expressions with *faire* (11a) or impersonal expressions with *il y a*, as in (11b):

- (11) a. *Quel temps fait-il ?*  
 what times make-it  
 'What's the weather like?'

*Il fait* (It makes) *chaud* 'hot', *froid* 'cold', *frais* 'cool', *beau* 'beautiful' ('nice outside'), *mauvais* 'ugly' ('bad weather'), *humide* 'humid', *du vent* (ART. wind', 'windy'), *du soleil* (ART. sun, 'sunny'), *nuageux* 'cloudy', *orageux* 'stormy'

- b. *Il y a du soleil aujourd'hui.*  
 EXPL locative particle have art. sun today.  
 'It is sunny today.'

### 2.2.4 Weather Verbs in Romanian

In Romanian, we find (a) weather verbs which take *pro* as subject, such as (a) *ploua* '(to) rain' (*Plouă*, 'Rains'), (a) *ninge* '(to) snow' (*Ninge*, 'Snows'), and (b) weather verbs which take a nominal as subject, such as (a) *bate/sufla* '(to) beat/blow' (*Suflă puternic vântul astăzi*. 'Blows heavily wind.the today'), and (a) *străluci* '(to) shine' (*Soarele strălucește azi*. 'Sun.the shines today').

There are weather expressions using the verb *a fi* 'to be' (12), the verb *a se face* 'to make' (13), the verb *a da* 'to give' (14):

- (12) a. *Este soare.*  
 is sun  
 'It is sunny.'  
 b. *Este frig.*  
 is cold  
 'It is cold.'

- (13) *Se face frig.*  
 refl.CL makes cold  
 'It is getting cold.'

- (14) *Dă cu ninsoare azi.*  
 gives with snow today  
 'It's snowing today.'

### 2.2.5 Weather Verbs in Latin

In Latin, weather verbs are impersonal: *pluit* ‘it has rained’, *tonuit* ‘it has thundered’, *ninxit* ‘it has snowed’.

The question is why the clause would feature a 3<sup>rd</sup> person form of the verb if there were no subject (Meillet 1937, 130-133). According to Meillet (1937) (as mentioned in Ruwet & Goldsmith, 1991), the construction with subject was the original (*Iove tonante, Iupiter pluvius*), in concord with the animistic concept ascribed to the early Indo-Europeans, who were assumed to explain natural phenomena by referring to gods and goddesses. Then a development from personal to impersonal took place, followed by a comeback to personal (which can receive a religious explanation: in Christian times, *dominus, caelum* came to be used with weather verbs in Latin).

However, there are *counterarguments* (Ruwet & Goldsmith, 1991) to this: the majority of weather verbs do not have a god-Agent or any other subject, the occurrence of subjects is not systematic, neither cross-linguistically, nor within a given language (Greek, Sanskrit, Latin), verbs without an explicit subject are not uncommon in Latin.

## 2.3 Weather Verbs in Chinese

There are no weather verbs in Mandarin Chinese, but weather expressions made up of the equivalent of the verb *fall* and a noun related to the weather:

- (15) *Jintian xia yu.*  
today fall rain  
‘It is raining today.’
- (16) *Dongtian xia xue.*  
winter fall snow.  
‘It snows in the winter.’

In this case, as argued by Hayle (2011), the subject of the verb is not the noun following the verb, but PRO. Given the fact that weather verbs can occur with some control verbs (17), causative verbs (18), and perception verbs (19), Hayle (2011) discards an NP-trace analysis of the subject of weather sentences in Chinese, opting instead for a PRO-analysis<sup>5</sup>:

- (17) *Wo xiangxin zai xia yu.*  
I believe PROG.marker fall rain.  
‘I believe it is raining.’

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<sup>5</sup> He also brings counterarguments against the NP-trace analysis of the subjects of weather expressions in Chinese, showing that, if one adopts such an analysis, the possibility of binding becomes problematic, given the fact that the trace is not preceded or c-commanded by its antecedent: *Jintian* [<sub>NP</sub> *e*] *xia yu*. Hayle speaks about Suner (1982) solving a similar problem in Spanish by arguing that Spanish is a language in which the empty element may be bound in subject position through the AGR position of INFL. However, this solution does not seem to hold for Chinese, since Chinese lacks the agreement feature.

- (18) *Kexuejia shi tiankong xia xue le.*  
 scientist make sky fall snow prt.completed action  
 (the marker *le* indicates completed action or a new state)  
 ‘The scientists made it (the sky) snow.’
- (19) *Haizhimen zai kan xia yu.*  
 children PROG.marker watch fall rain  
 ‘The children are watching it rain.’

Since the verbs *kan*, *xiangxin*, and *shi* characteristically select S’ (*kan* and *xiangxin* also select NPs), the verbs embedded under them must have subjects; in the case of other verbs, the subjects will be lexical, in the case of weather verbs, the subjects will be phonetically empty (PRO).<sup>6</sup>

### 3 Shedding Light on the Data

The purpose of this paper is to provide representations for weather constructions. In the previous section, we have simply listed examples from various languages across the world, but we have to make sense of the data presented. In doing so, we will rely on some very relevant ideas put forth by Eriksen, Kittilä & Kolehmainen (2010). The first is the three-fold typology that they propose for meteorological constructions (predicate type, argument type, argument-predicate type). The second is the distinction they make between precipitation events and temperature events.

Eriksen, Kittilä & Kolehmainen (2010) argue that meteorological events can be divided into three categories: (a) the predicate type, (b) the argument type, and (c) the argument-predicate type.

In the predicate type, a predicate expresses the meteorological event, while an argument has other functions. The predicate type can be subdivided into several subtypes: the attransitive type (*È freddo.*, ‘Be.3SG.PRES. cold.M.’), the expletive type (‘It is cold’), the intransitive predicate type, in which case the subject is semantically richer than the purely grammatical non-referential expletive subject, as it refers to background entities serving as the stage or source of the event: it may denote the location (‘world’, ‘place’, ‘nature’, ‘surroundings’ a.o.), the time (‘day’, ‘time’ a.o.), or the atmospherical background (‘sky’, ‘weather’, ‘air’ a.o.) (‘The sky rains heavily today’), and the transitive predicate type, which is very rare cross-linguistically, but can, nevertheless, be found (as cited in FTC: *Helsingin Sanomat* 1995):

- (20) *kun harmaa taivas alkoi vihmoa vettä* (Finnish)  
 when gray.NOM sky.NOM PST.3SG drizzle water.PART  
 ‘when it started to rain from the gray sky.’ (lit.: ‘when the gray sky started to drizzle water.’)

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<sup>6</sup>The verb *shi* behaves differently in that it appears to require a lexical subject for its embedded sentences, even in the case of *xia yu/ xue*.

In the argument type, an argument is responsible for expressing weather, while the predicate is semantically vacuous. The argument type subsumes several types: the intransitive argument type (21), the existential type (22), the transitive argument type (23):

(21) *Cad ninsori mari peste noi.* (Romanian)  
 Fall.3PL snowfalls big over us.

(22) existential type  
*Exi katejida.* (Greek)  
 have.3SG storm.ACC.SG.F  
 ‘There is a storm.’

(Stavros Skopeteas, p.c.)

(23) transitive argument type  
*Mili-de goBwel-āri duna.* (Northern Akhvakh)  
 sun-ERG illuminate-PERF world  
 ‘The sun is shining.’ (lit. ‘The sun has illuminated the world.’)

(Denis Creissels, p.c.)

In the argument-predicate type, both a predicate and an argument are involved. The argument-predicate type covers the cognate type, where the elements taking part in the meteorological event encode the same facet of the event (24), and the split type, where each element taking part in the meteorological event encodes a different facet of the event (25):

(24) *Thato e thato.* (Toqabaqita)  
 sun 3SG.NFUT (sun)shine  
 ‘The sun is shining.’

(Frank Lichtenberk, p.c.)

(25) split type  
*The wind is blowing.*

Apart from this very useful typology, the authors also distinguish between precipitation events and temperature events, arguing that precipitation events mainly use the argument type, whereas temperature events mainly use the predicate type. Given the fact that there are precipitation verbs in a lot of languages across the world, the predicate type remains, nevertheless, an important means of describing precipitation events.

Interestingly, in all languages presented in the previous section, we seem to have no subject for ‘to shine’ or ‘to blow’. They require an argument-predicate type expression, unlike verbs like ‘to rain’ or ‘to snow’ that are predicate-type:

(26) a. *The sun shines.*  
 b. *\*It shines.*  
 c. *The wind is blowing.*  
 d. *\*It is blowing.*

A possible explanation for this could be the fact that elements such as the sun or the wind have a higher degree of agency than the rain or the snow, as suggested by Piaget (1972). This would explain why we do not say *The rain rains*, but we say *The sun shines*. The reason why we say *The sun shines*, but we do not say *The sky rains*, on the other hand, could be the fact that, while the sun is easily detectable as the source of light, it is not that clear who rains: is it the sky, the clouds, is it God? The examples just presented are, however, an exception to the general pattern of weather expressions.

If we analyze the data presented in the previous section, we see that weather verbs basically lack real subjects, that is, they either take *pro* as subject, or they take an expletive subject like *it*. Apart from these elements, they may take *God* as subject, or other nouns denoting the stage or the source of the meteorological event, and they may take demonstrative or personal pronouns as subjects (as seen in colloquial German, in Dutch dialects, or in Icelandic).

The fact that weather verbs, nevertheless, take subjects (that is, in the words of the article just discussed, they do not only allow for the predicate type, but also for the argument type, and for the argument-predicate type) suggests that the ‘fake’ subjects of weather constructions (by which we basically understand *pro* and expletives) may not be that fake after all, but, actually, they bear semantic content.

Moreover, we see that languages have weather paraphrases that make use not only of the verb *fall*, but also of the verb *be* or the verb *make*, therefore, both of a verb that has a Patient as a subject, and of a verb that has an Agent as a subject.

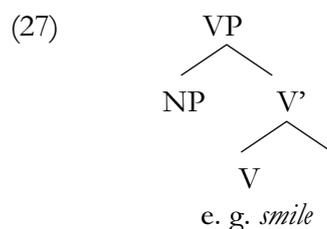
Taking the above into consideration, we would like to answer the question if weather verbs are unaccusative or unergative, since establishing this might aid us in the decomposition of verbs.

## 4 Are Weather Verbs Unaccusative or Unergative?

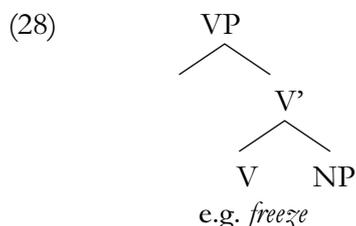
### 4.1 Weather Verbs and Unaccusativity Tests

According to the traditional distinction between unergatives and unaccusatives, there are different semantic and syntactic properties that distinguish between the two (Perlmutter 1978, Burzio 1986, Chomsky 1981):

a. Unergatives: denote volitional acts, their argument is the Agent of the event, and it has control over the event, they denote mainly atelic events, at D-structure, they have an external argument but no internal argument, they can assign Accusative case in special configurations:



b. Unaccusatives: denote mainly non-volitional acts, their argument is never the Agent, and it does not have control over the event, they denote mainly telic events, at D-structure, they have an internal argument but no external argument, they are unable to assign Accusative case (as follows from Burzio's Generalization):



The difference between these verbs seems to lie in the status of the subject: whether it is an external argument or an internal argument.

In order to see the nature of weather verbs, we will see how they behave with respect to *unaccusativity tests*: *there*-sentences, locative inversion, resultatives, past participle used as a modifier inside NPs, auxiliary selection (Levin & Rappaport Hovav 1995, Avram 2003). The first four are English-specific tests:

(i) *There*-sentences

Only prototypical unaccusatives (verbs of existence, verbs of appearance) can occur in *there*-sentences (29a):

- (29) a. *There arrived a beautiful girl at our house yesterday.*  
 b. \**There rained a lot yesterday.*  
 c. *It rained a lot yesterday.*

Apparently, weather verbs cannot occur in *there*-sentences (although one might speculate upon the similarity between *there* and *it*), from which we can infer that they are either non-prototypical unaccusatives, or that they are unergatives. This test does not, therefore, pin down their status with respect to unaccusativity.

(ii) Locative inversion

As for locative inversion, unergatives cannot occur in locative inversion constructions (30a), only unaccusatives can (30b):

- (30) a. \**In the park jumped the squirrels.*  
 b. *Outside our house lived three little creatures.*  
 c. *Outside poured a terrifying rain.*  
 d. \*/??*In our country snowed a lot this year.*

As we can see from (30c), weather verbs cannot occur in locative inversion constructions, only some can (such as *pour*). However, it is debatable whether *pour* should be considered a weather verb, given the fact that it is more or less like *fall*, i.e. a verb of motion that accompanies a weather noun. Moreover, in (30d), there is no subject predicate inversion, because no subject is present, hence, the structure fails to obey the locative inversion characteristics. Therefore, this test is, again, not relevant enough to make clear the unaccusative or unergative nature of weather verbs.

(iii) Resultatives

Only unaccusatives enter real resultative constructions (31a), unlike unergatives, which enter fake reflexive/object resultative constructions (31b):

- (31) a. *He fell into a coma.*  
b. *They cried themselves to sleep. / They cried their eyes out.*  
c. *\*They cried to sleep.*  
d. *\*It rained into oblivion.*  
e. *\*/???It rained itself into oblivion.*

On the one hand, weather verbs behave like unergatives, as they do not enter 'real' resultative constructions (31d). On the other hand, they behave like unaccusatives, as they do not enter fake reflexive resultative constructions (31e). This, however, may be due to the pseudo-referentiality of the expletive: the expletive may not have enough referential force to bind the fake reflexive.

(iv) Past Participle used as a modifier inside NPs (modifiers of 'subject')

The past participle of unergatives cannot be used as a modifier inside NPs, as in (32a):

- (32) a. *\*the smiled girl*  
b. *\*/???the rained rain*  
c. *\*/?? the snowed snow*

As we can see, weather verbs seem to behave like unergatives. Weather verbs can occur as participles (*snowed inn, snowed car*), but not as modifiers of subjects (32b,c). However, it might be the case that (32b) and (32c) are odd/ungrammatical because they are redundant expressions, not because the weather verbs used are unergative rather than unaccusative.

It thus seems very hard to establish the unaccusative/unergative nature of weather verbs from the four tests above. But this in itself is significant, indicating the fact that weather verbs are a special class: they sometimes behave like unaccusatives, and sometimes like unergatives.

(v) Auxiliary selection

Auxiliary selection proves more relevant in this respect. In Romance languages, unergatives select the verb *have* and unaccusatives select the verb *be*. Interestingly, we see that, in Italian, weather verbs can select both the verbs *avere* and *essere*:

- (33) a. *Ha piovuto ieri.*  
has rained yesterday  
'It rained yesterday.'  
b. *È piovuto ieri.*  
is rained yesterday  
'It rained yesterday.'

However, as argued in Benincà & Cinque (1992), not all weather verbs in Italian display this kind of alternation: *tuonare*, 'thunder', *gelare*, 'freeze', for example, do not take

the verb *essere* as an auxiliary. Benincà & Cinque (1992) argue that the verb *essere* can only occur with verbs of change of state, but this explanation does not seem to hold, given the fact that a verb like *tuonare* (which is not a change-of-state verb) can also occur with *essere*. Moreover, weather verbs in French, for example, do not display this kind of alternation.

The Italian data is, nevertheless, relevant. From the data, we can derive that weather verbs sometimes behave like unaccusatives and sometimes like unergatives (in different languages, as well as in the same language), but mostly like unaccusatives. Moreover, from a semantic point of view, weather verbs are unaccusatives (*\*It intentionally rained on us.*).

We have to take into account the fact that subjects of unergatives occupy a different position in the structure from ‘subjects’ of unaccusatives (SpecV versus complement of V). Apart from intransitive uses, weather verbs can also enter other types of constructions (transitive, or with a prepositional complement (as in *It rained heavily on us yesterday* a.o.), which might be thought to pose problems to our analysis of weather verbs as ‘FALL SOMETHING’.

## 4.2 Proposal

We will adhere to the conflation theory of verb formation put forth by Hale & Keyser (2002), arguing that ‘rain’ can be decomposed as ‘fall rain’. Several arguments can be brought in favor of this.

First, in a language like Chinese, there are no weather verbs but, instead, a construction using the verb *fall* and a weather noun (*rain, snow*). Second, weather sentences in various languages can be paraphrased using this construction: *rain* = ‘FALL rain’, *snow* = ‘FALL snow’.

Further evidence in favor of the incorporation theory comes from Finnish, where the precipitation verb, *sataa* ‘rain’, originally meant ‘to fall’ (Hakulinen 1999: 195) (in Eriksen, Kittilä and Kolehmainen 2010), but, now, the original meaning has been lost, and *sataa* can only mean ‘to rain’, or ‘to precipitate’. If it is to express events of snowing or hailing, arguments must be added:

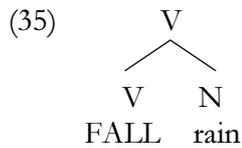
- (34) a. *Sataa* (vet-tä).  
 Rain.3SG.PRES (water-PART)  
 ‘It is raining.’
- b. *Sataa* lun-ta.  
 rain.3SG.PRES. snow-PART  
 ‘It is snowing.’
- c. *Sataa* rake-i-ta.  
 rain.3SG.PRES hail-PL-PART  
 ‘It is hailing.’

‘Generalized p-encoding’ (generalized precipitation encoding), as labeled by Eriksen, Kittilä & Kolehmainen (2010), thus supports the conflation theory.<sup>7</sup>

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<sup>7</sup> This phenomenon does not occur only in Finnish, it occurs in other languages as well: one such example is Hungarian, where the impersonal verb for raining (*esik*) is the same as the verb for falling.

The structure we will assume for ‘rain’ is an l-structure in the Hayle & Keyser (2002) sense, i.e. a structure that is formed in the lexicon, pertaining to l-syntax:



In this structure, the verb is followed by a bare noun, not an NP or a DP, and the bare noun gets incorporated into the verb by means of conflation. Whether or not there also is an external argument is irrelevant, because, given the fact that we are in l-syntax, Burzio’s generalization does not have to be observed: the bare noun does not need any case.

Although Burzio’s generalization poses no problem, from a semantic point of view, this structure only seems to account for the unaccusative use of weather verbs, not for the unergative use. We therefore need to enlarge this structure so as to include the causative component as well.

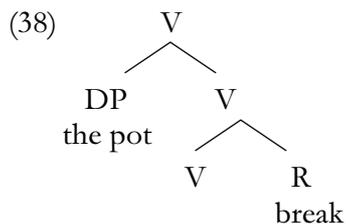
Hale & Keyser (2002) give a special attention to the causative-inchoative transitivity alternation which occurs in the case of unaccusatives, but does not occur in the case of unergatives. This could be explained by the fact that unergatives already contain the causative component (the cause resides inside the subject of the verb). We have:

- (36) a. *The pot broke.* (inchoative)  
 b. *I broke the pot.* (causative)

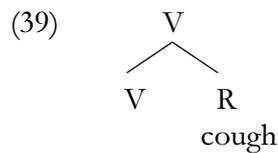
But, at the same time:

- (37) a. *The engine coughed.*  
 b. *\*I coughed the engine.*

This is captured by saying that, in (38):



The root requires a specifier (for them the Specifier is actually the ‘complement’)<sup>8</sup>, whereas in (39), the root does not require a specifier:



The causative-inchoative alternation is different from the unaccusative-unergative ‘alternation’ (e. g. a verb like *monter* can take either *avoir* or *être* in the *passé composé*). However, in one respect at least, they are similar, namely, when a verb is unergative/or it is used unergatively, it contains a causative component in its structure.

We would like to examine the situation in the case of weather verbs. Are they a case of inchoative-causative alternation? Do they rather exemplify an unaccusative/unergative ‘alternation’? Or both? By looking at (40):

- (40) a. *It rained.*  
 b. \**God rained it.*  
 c. \**The rain rained.*  
 d. *God rained a heavy rain.*

We see that the inchoative/transitive alternation is **imperfect**. This can be explained by saying that *it* is not a full-fledged DP, and it cannot occur in object position, and/or by saying that *it* is pseudo-referential, and if we assume its reference is *God*, then a sentence like *God rained God* would not make much sense.

On our account, *it* can refer to two different things, either God or the rain:

- (41) *It rained.*  
 = God/ the sky rained.  
 OR  
 = The rain rained.

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<sup>8</sup> One can remark that DPs are allowed at l-syntax (they occur in Spec, V). Hale & Keyser (2002) do not make it so clear where wordhood ends and the real syntax begins. When incorporation into a lexical item occurs, a new item is formed, and is then spelled out as a word. Heads incorporate complements, and, through movement, they can also incorporate other heads (e.g. in *shelve the books*, the prepositional head ‘onto’, which has already incorporated ‘the shelves’, gets incorporated into the verbal head ‘put’, giving rise to ‘shelve’). Specifiers, however, cannot be incorporated. We might make the assumption that the reason for this is precisely the fact that they are phrases. However, if we think about an example such as *put the apples into boxes*, which gives rise to *box the apples*, we notice that even the complement of ‘into’ is not a bare noun, but a noun bearing number morphology, i.e. at least a NumP. This implies that l-syntax makes use of units higher than words to form words. Moreover, the words that are used are also the result of some process (lexical, morphological). Given that, basically, all the syntactic operations (lexical or syntactic proper) are, from a representational point of view, shown on the same tree, it becomes very difficult to say what the borderline between l-syntax and real syntax is, from a derivational point of view. Real syntax picks up where l-syntax left off. So, we will assume that, after a phrase like *box the apples* is created, it will enter ‘real’ syntax, getting a subject, a tense. However, such terminology is quite superfluous; in fact, it seems to be the case that we have syntax all over, and it is not at all clear where wordhood ends (or begins, for that matter).

This is in consonance with the German, Dutch, and Icelandic facts mentioned when presenting the data (i.e., instead of an expletive, we can have either a demonstrative pronoun or a personal pronoun *he*<sup>9</sup>). Moreover, it is also in consonance with the facts from the history of language (e.g. Latin). According to von Seeffranz-Montag (1984:526), Dal (1966: 166-167) and Lenerz (1992) (as cited in Eriksen, Kittilä, and Kolehmainen 2010), the insertion of an expletive subject indeed occurred first with meteorological verbs that lack a topicalizable constituent, and it was only later that the use spread to other constructions.

Our proposal is that the verb enters two possible structures: (a) unergative, and (b) unaccusative. As unergatives, they have the structure CAUSE [FALL RAIN]<sup>10</sup>. This structure is in accordance with Hale & Keyser's (2002) view that unergatives are transitives underlyingly, a view that is supported by the presence across languages of unergative paraphrases made of light verbs and direct objects such as *do a dance* in a sentence of the type *My mother did a beautiful dance yesterday*, and, also, the presence of cognate objects with unergatives (e.g. *She smiled a wonderful smile.*). As arguments in favour of the unergativity of weather verbs (in some cases), we bring the fact that the verbs select a *have* auxiliary in the languages where we have a *to be/to have* alternation, and, also, that the subject is not an expletive, but a pronoun in some languages. As unaccusatives, weather verbs have the structure FALL RAIN. In this case, we can have a transitive/unaccusative alternation: *God rained this rain on us to punish us.*

### 4.3 A Previous proposal. The 'Always Cause' Subject.

In her doctoral thesis, Manente (2008) proposes a representation for weather verbs, following the ideas of Hale & Keyser (2002), and also the suggestion put forth by Fernandez-Soriano (1999: 103) that verbs like *pleuvoir* 'rain', *neiger* 'snow' and *grêler* 'hail' always select an internal object that merges with the verb and denotes an atmospheric substance. In the structure proposed by Manente (2008), the internal object occupies the position [Spec, SV]:

- (42) a. Sv[*pro* v'[v° ha piovuto<sub>i</sub>/nevicato<sub>i</sub>/grandinato<sub>i</sub>  
SV[(pioggia/neve/grandine) [V'[V° t<sub>i</sub> SP<sub>locatif</sub>[Ø/(a Roma)]]]]]]
- Sv[*pro* v'[v° has rained<sub>i</sub>/snowed<sub>i</sub>/hailed<sub>i</sub> SV[ (rain/snow/hail) [V'[V° t<sub>i</sub>  
SP<sub>locative</sub>[Ø/(in Rome)]]]]]]
- b. Sv[*Il* v'[v° a plu<sub>i</sub>/neigé<sub>i</sub> SV[ (pluie/neige [V'[V° t<sub>i</sub> SP<sub>locatif</sub>[Ø/(à Rome)]]]]]]
- Sv[*It* v'[v° has rained<sub>i</sub>/snowed<sub>i</sub> SV[ (rain/ snow [V'[V° t<sub>i</sub> SP<sub>locative</sub>[Ø/(in Rome)]]]]]]

On this view, the object of the weather verb is a Theme, and it occupies [Spec, SV], while the subject of the weather verb (*pro* or *Il*) is a Cause, and it occupies [Spec, Sv].

<sup>9</sup> Interestingly, even in French, we have '*il pleut*', not '*elle pleut*'.

<sup>10</sup> In "Building Verb Meaning" (1998), Rappaport Hovav & Levin argue that UG provides five possible lexical semantic representations: [x ACT<MANNER>] (activity), [x <STATE>] (state), [BECOME [x <STATE>]] (achievement), [[x ACT<MANNER>] CAUSE [BECOME [y <STATE>]]] (accomplishment), [x CAUSE [BECOME [y <STATE>]].

As for the case where the weather verb selects *être*, Manente (2008) explains this by saying that the verb here only selects an argument that is the internal object of the verb:

(43) *Sono piovute pietre.*  
 are rained stones  
 ‘It has rained stones.’

(44) \**Hanno piovuto pietre.*  
 Have rained stones  
 ‘It has rained stones.’

(45) a. *Il a plu une petite pluie fine.*  
 It has rained a little rain smooth.  
 ‘It rained smoothly.’

(Ruwet 1989: 327 (47a))

b. *Il a neigé de gros flocons.*  
 it has snowed art. big snowflakes.  
 ‘It snowed heavily.’

(Ruwet 1989: 329 (54a))

Manente’s analysis is different from the analysis that we propose in this paper: whereas, in her representation, *il* and *pro* are Causes, in our analysis, the expletive pronoun *it* acts as a Cause in the unergative cases and as a non-Cause in the unaccusative cases. We argue for the polysemy of the expletive: the expletive has different semantic values/ theta roles depending upon the position it occupies in the I-structure (as a subject/ Specifier of ‘FALL rain’, or as a subject/Specifier of ‘CAUSE [FALL rain]’).

#### 4.4 Weather Verbs and Theta-Roles

Arguing that weather verbs can be either unaccusative or unergative implies that, in some cases, their subject is a Theme, while in others, it is a Cause/an Agent. However, this is a very debatable assertion.

‘In Mainen (2010), for example, argue that meteorological constructions simply lack participants<sup>11</sup>. The lack of real participants is most obvious with temperature constructions, like *It is cold/hot*, where the predicates do not seem to refer to any specific entities. Although other meteorological events may at first sight seem to offer potential candidates for grammatical participants (snow(flakes), rain(drops), hail(stones), and lightning (bolts)), they nevertheless do not count as typical participants. The authors bring several arguments in favor of their claim. First, the selection range of participants for each of these events is extremely narrow, consisting of only the given participant from the list above. While a verb like *dance* can, for example, select hundreds of various participants (e.g. men, women a.o.), it is only snow that can snow and hail that can hail (disregarding metaphorical uses). Second, even though snow might be said to participate in snowing, it is non-specific in doing so. While other events may pick up particular referents from a set of semantic participants, events of precipitation do not: while we can say *this policeman*, it is strange to say *this snow*. An important consequence of the lack of

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<sup>11</sup> Chomsky (1981) speaks about an atmospheric theta-role, a proposal which supports the idea that weather verbs lack typical participants.

distinct participants is that weather phenomena can be described in full just by a predicate, and no arguments are needed. This is the reason why Van Volin & LaPolla (1997:150) have labelled them *atransitive* (Eriksen, Kittilä & Kolehmainen 2010)<sup>12</sup>.

The point of view adopted in this paper is, however, different from the one just presented. Contrary to the idea that the nouns combining with weather verbs do not function as real participants, we will argue that they actually do, and that the arguments brought by the authors in favor of their fake participant status are in fact not so strong. First, although the selection range of weather verbs is narrow, weather verbs are not alone in this: *neighing*, for example, is specific to horses, while *quacking* is specific to ducks, a.o. Second, although the participants in meteorological events are non-specific, it is indeed odd, but not impossible, for them to be specific. One can produce sentences such as:

(46) *This rain has been raining for a week now! When will it ever stop?*

(47) *These snowflakes keep falling from the sky.*

Taking these into consideration, we will claim that weather verbs take real participants, the only particular thing about them being that they happen to have the same phonetic form as the verb they combine with (they are ‘cognate’).

Interestingly, Eriksen, Kittilä & Kolehmainen (2010) distinguish between entities such as *snow*, *rain*, *hail* a.o., and entities such as *gods*. While the first are part of the weather event, the last are not: deities are represented as an external participant responsible for the denoted event. This is also indicated by the fact that the object has the same phonetic form as the verb, whereas the noun denoting a deity does not. The paper argues that, although the object can be incorporated, it is still a real participant bearing a theta-role (Theme).

#### 4.5 On the Nature of the Cognate Object. Weather Verbs and the Cognate Subject.

Ruwet & Goldsmith (1991) argue that the extraposed ‘subject’ in an example such as:

(48) *Il a plu toute la journée une petite pluie fine.*  
EXPL has rained all the day a little drizzling smooth  
‘It drizzled all day.’

is actually a cognate object, i.e. an object that has a phonetic form that is very similar to that of the verb, either for morphological reasons (as in *to laugh a laugh*), or for semantic reasons (as in *to fight a battle*). If we assume it is a cognate object, then we expect them to have the properties of cognate objects, such as the fact that they mainly occur with unergatives, that they cannot be passivized, or that they cannot undergo *it*-pronominalization (in situ) (Iwasaki 2007). However, if we look a bit more carefully at the data (as argued by Iwasaki 2007), we realize that it is not that clear what the properties of cognate objects are.

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<sup>12</sup> They are complete without any other element present than the verb, in this respect being different from instances of *pro*-drop, which can be complemented by a lexical element.

As for their mainly occurring with unergatives, we see that they can also occur with unaccusatives:

(49) *John died a peaceful death.*

Moreover, even in the case of unergatives, problems arise, in the sense that some verbs allow bare COs (cognate objects), while others take COs that need modification:

(50) *Mary sang a song.*

(51) \**John smiled a smile.*

Although COs are claimed not to passivize, we see that, in fact, there are COs that can passivize:

(52) *Life here had been lived on a scale and in a style she knew nothing about.*

It is said that COs cannot undergo *it*-pronominalization. However, if we look more carefully, we see that cognate nouns such as *dance*, *life*, *dream* can, in fact, undergo *it*-pronominalization (Ciutescu 2010):

(53) *The Princess dreams strange dreams, and I dream them too. Does that make me a Princess?*

Taking these into account, we see that one cannot pin down a number of properties that are specific to cognate objects, therefore, the only reliable test for a noun to be labeled as cognate object remains the phonetic, morphologic and semantic similarity to the verb that it combines with. Nevertheless, a very important thing to remark is that the cognate object is not an adjunct, as shown in Ciutescu (2010), but an argument. There is no need to postulate an adjunct status for the CO to explain the alleged properties of the COs mentioned above, given the fact that they are not actually properties of COs. Instead, one can assume that cognate objects are in fact arguments (Swart 2007, Avram 2006, Kuno & Takami 2004, Massami 1990, MacFarland 1995, as cited in Ciutescu 2010), bearing theta-roles, an assumption which explains why they behave so much like direct objects (they have to be adjacent to the verb, just like direct objects), and which goes hand in hand with Hale & Keyser's (2002) view upon unergatives as underlying transitives.

As for the weather noun combining with the verb, we will assume that is a cognate object on the basis of its similarity to the verb that it combines with. In adopting this view, we take into account the existence of agent constructions such as:

(54) *God rains this rain to make us feel brand new.*

Whereas in transitive constructions, the object the verb combines with is an NP, with modifiers/a DP, in intransitive constructions, it can be either an NP with modifiers/a DP (*The snow is falling down slowly*), or a bare noun that gets incorporated into the verb (*It is snowing heavily*). On this basis, we will therefore assume it is a cognate object (actually, a lexicalized version of the object that is already present underlyingly).

There is, however, an important difference between the cognate object of weather verbs and the cognate object of transitive verbs such as *smile* or *laugh*. While in the latter case, the object remains an object at S-structure (*She smiled an enchanting smile*), in the first case, the object (*rain* in *fall rain*, for example) becomes an S-structure subject. This leads us to propose the notion of *cognate subject*<sup>13</sup> for those weather nouns that function as internal arguments of weather verbs, but appear as subject.’

#### 4.6 Control Issues. The Subject.

Leaving aside the cases where the subject is a weather noun that starts out as the internal argument of the verb, and the cases where the subject is a Cause/an Agent nominal, an important matter is the status of the ‘subject’ of weather verbs (an expletive, a *pro* or even a PRO).

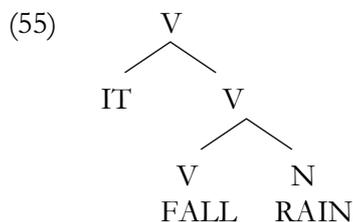
In order to account for the fact that there is control between *it/pro* and the PRO following it in *It sometimes rains after PRO snowing* (Chomsky 1981: 324), we adopt the view that *it* is (pseudo-)referential. Sometimes IT is a CAUSE (GOD, ‘the sky’, ‘nature’), sometimes IT is the entity denoted by a weather noun. In the second case, we argue for the coindexation of the two. However, since *it* precedes the weather noun, we run into control problems. To avoid this, we will assume that the coindexation is done later on through the agreement features of Inflection, as also suggested by Suner (1982) (in Hayle 2011) for Spanish: *[it]<sub>i</sub> falls rain<sub>i</sub>*.

Throughout the paper, we have spoken about weather IT as an expletive; weather *it* is, however, different from expletive IT. According to Yoon (2003), expletive IT in a sentence like *It is obvious that the world is round* is analyzed as generated in [Spec, CP], and then moving into [Spec, TP] due to the EPP feature of T. As for weather *it*, we will assume that, due to its being pseudo-referential, it is generated in [Spec, VP], and it raises to [Spec, TP] to check the EPP feature of T.

### 5 Representing Weather Expressions. Conclusions

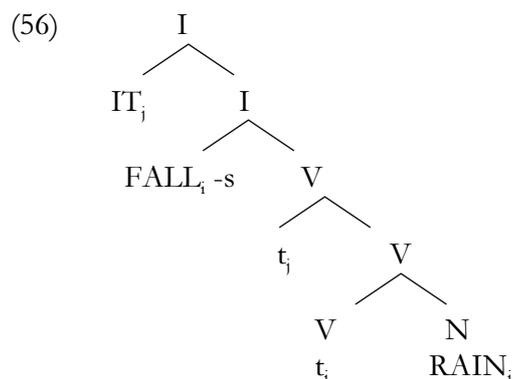
In conclusion, weather verbs basically enter two possible structures:

(a) unaccusative: FALL RAIN, in which case we may have a transitive/unaccusative alternation: *God rained this rain on us to punish us*.



<sup>13</sup> The notion ‘cognate subject’ was suggested by Larisa Avram.

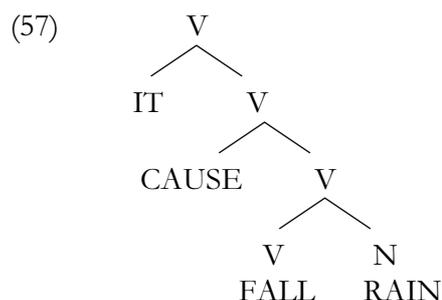
And IT is coindexed with RAIN (*It is raining now*), as shown in (56):



IT is coindexed with FALL (through the agreement features of inflection), and FALL is coindexed with RAIN (head-complement relation) (i=j).

and:

(b) unergative: CAUSE [FALL RAIN]



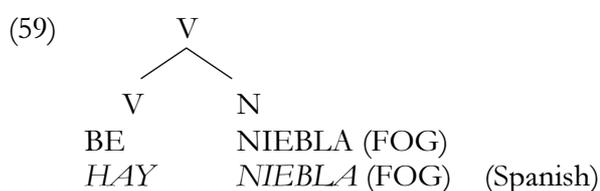
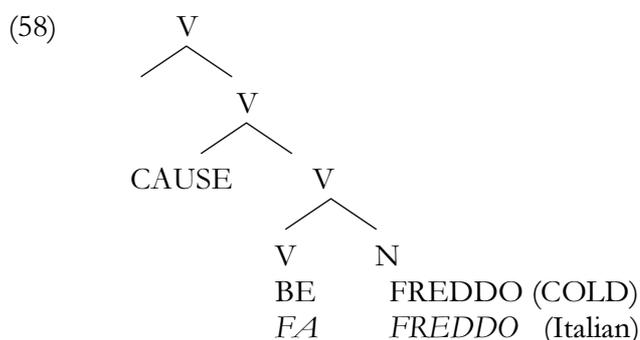
in which case there is no alternation, and IT may refer to GOD (*It rains with vengeance on us*) or THE SKY.

In other words, we could say that sometimes we have silent RAIN and sometimes we have a silent GOD, and when they do speak, they are IT. It is not clear what IT refers to in current English. The alternation is present both in diachrony and in synchrony in many languages, where the subject is either an expletive or *pro*. In Italian, for example, *pro* behaves just like IT. While in English, we do not really know the exact reference of IT (it could even be argued that it is always a Cause, as argued by Manente (2008) for French *il<sup>th</sup>*), in Italian, function of the auxiliary verb selected by weather verbs (*essere* or *avere*), we can argue for a CAUSE *pro* in the *essere* case, and a NON-CAUSE *pro* in the *avere* case.

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<sup>14</sup> Weather verbs in French select only *avoir*, which may be taken to indicate their unergative nature.

We have shown how the representations work for weather verbs, but not for weather expressions. We take a causative example, and a non-causative example:



In these cases, we will argue that no incorporation takes place (*HAY* acts as a near-synonym of BE, just like *FA* (*FARE*) acts as a near-synonym of CAUSE). Our assumption is theoretically-driven, given the fact that, in the system proposed by Hale & Keyser (2002), incorporation starts bottom-up, so, if we assume the noun is a complement of the verb, it would have to get incorporated first (into V), and then the resulting V would have to get incorporated into CAUSE. However, the noun gets spelled out, so this is not the case. Instead, we will assume that the light verb CAUSE in the example above gets spelled out (the verb BE does not get spelled out in the first example, neither does incorporation into BE take place), and that the light verb BE in the other example also gets spelled out. It thus seems to be the case that conflation theory is only needed in the case of weather verbs, weather expressions being a spell-out of the underlying structure of weather verbs.

The paper has shown that weather verbs can best be analysed by making use of incorporation, in the framework proposed by Hale & Keyser (2002), as suggested by the presence of numerous paraphrases across languages, by the existence of a phenomenon such as generalized p-encoding a.o. Moreover, it has shown that the subject of weather verbs is not that 'expletive', but actually bears a theta-role, sometimes acting as a Cause, and sometimes as a non-Cause. We take this as supportive of the idea that language reflects just how we humans are: believers and non-believers alike.

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