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WEATHER VERBS SIFTED THROUGH A MOTION SIEVE

ABSTRACT.

In cognitive frameworks à la Talmy, the weather verb ‘to rain’ has been analyzed repeatedly as a MOTION verb incorporating the FIGURE ‘rain’ in the verb root. In this contribution we claim that weather verbs can indeed be analyzed as motion verbs, albeit with a very heterogeneous behavior with respect to the presence of the conceptual components FIGURE and PATH. However, they consistently express MANNER, both in atmospheric and metaphorical contexts. Despite their conceptual structure as motion verbs, cross-linguistic differences in the availability of weather verbs in Russian and several Romance and West-Germanic languages cannot be accounted for through Talmy’s classification of verb-framed and satellite-framed languages. Nevertheless this classification is partly verified for weather verbs used metaphorically to express directional motion.

KEY-WORDS: *weather verbs, atmospheric use, motion verbs, metaphorical use, semantic conflation, FIGURE-incorporation, V-framed & S-framed languages, MANNER-incorporation.*

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Introduction

The majority of work consecrated to the study of weather verbs analyzes their argument structure (*cf.* among many others Darden 1973, Ruwet 1990, Paykin 2010, Bleotu 2012, Meulleman & Stockman 2013), often putting emphasis on their impersonal subject and sometimes taking into account possible NP expansions, like in *It is drizzling a cold little rain*. These verbs, whose behavior is unanimously considered as particular because of the

conceptual difficulty of distinguishing participants and processes inside the complex atmospheric phenomena they encode¹, have also received some attention on the margin of theoretical studies tackling more general phenomena, such as, for instance, conceptual or cognitive structure of motion verbs (*cf.* Jackendoff 1983, Talmy 2000). It does seem, however, that these studies focus exclusively on the verb denoting rain, thus promoting it to the status of the most prototypical weather verb, possibly characteristic of the whole class (*cf.* Bleotu 2012).

In the present paper, we will examine the semantic structure of the weather verb class as a whole inside the conceptual structure framework à la Talmy (2000) and concentrate specifically on three questions: a) are weather verbs motion verbs? b) can the verb ‘to rain’ represent the entire class of verbs denoting atmospheric phenomena? and c) does Talmy’s (2000) distinction between verb-framed and satellite-framed languages apply to the weather domain and account for cross-linguistic differences in weather verbs?

Our study is structured as follows. We will start with a short summary of the theoretical background, briefly presenting previous analyses elaborated by Jackendoff (1983) and Talmy (2000). Then, we will examine to what extent weather verbs can be conceptualized as motion verbs and whether they form a homogeneous semantic class in this respect. Finally, we will verify whether the cross-linguistic differences in the availability and use of weather verbs in some Germanic, Romance and Slavic languages can be accounted for by Talmy’s distinction between verb-framed and satellite-framed languages.

1. Theoretical background

In 1983, Jackendoff proposes to consider semantic structure as a conceptual structure and decomposes various lexical verbs into constitutive conceptual elements². Under his analysis the verb *rain* has the conceptual structure under (1).

(1) [EventGO ([ThingRAIN], [PathDOWNWARD])] (Jackendoff 1983 : 185)

¹ According to Ruwet (1986: 202-203), weather events are perceived in a global way, which is incompatible with the analytical character of syntactic encoding. Langacker (1991: 366) calls them “all-encompassing phenomena” lacking the “clear-cut division into setting, process and discrete participants”. Recently, Eriksen *et al.* (2010: 567-568) claimed that “meteorological events differ in terms of whether one may conceptualize the given event as incorporating participant-like entities, but the general feature is that in none of these cases can any such entity be perceived as a participant which is referentially independent from the event itself.”

² According to Ruwet (1990: 56), a similar analysis has already been presented in his 1972 book.

Therefore, according to Jackendoff, the verb *to rain* denotes a motion event that incorporates the THING ‘rain’ and the PATH ‘downward’. Nothing is said though of other meteorological verbs, which are rather scarce in English as they are limited to precipitation verbs, such as *to snow* or *to hail*, and the verbs *to thunder* and *to lightning*³. While the proposed structure can easily be adapted to all precipitation verbs through the necessary modification of the THING, the case of the verbs *to thunder* or *to lightning* is more complicated as there is no clear THING nor clear PATH and the denoted event cannot be reasonably conceived of as a “GO event”. Indeed, one can wonder if the conceptual structure for the verb *to rain* was intended as a model transposable to other atmospheric phenomena, in which case a structure in (2) can be proposed for the verbs *to thunder* and *to lightning* through analogy.

(2) [EventAPPEAR ([ThingNOISE/LIGHT], [PathDISCHARGE TRAJECTORY])]

Talmy (2000, II: 57), in his turn, mentions the same verb *to rain* to illustrate a possible semantic conflation of a FIGURE and a MOTION event in the verb root, a lexicalization pattern of motion events, rare in English but typical of certain languages, such as Atsugewi and Navajo, for example. Talmy’s analysis resembles that of Jackendoff (1983) in that the FIGURE of the former can be compared to the THING of the latter but nothing is said of the PATH. While Jackendoff’s analysis deals with the conceptual structure of a specific verb, Talmy is interested in lexicalization patterns of motion events used in various languages⁴. The verb *to*

³ It is questionable whether the verb *to freeze* should be considered as a weather verb. Indeed, its *-ing* form in *it is freezing* has a problematic syntactic status and the clearly verbal form is mostly attested in personal constructions such as *the lake froze* and *the cold weather froze the water pipes*.

⁴ Unlike Jackendoff, Talmy’s (2000) main objective is to classify languages. Since each motion event involves four basic components (FIGURE, MOTION, PATH and GROUND) and two peripheral components (MANNER and CAUSE), languages fall into different categories according to the way of expressing these components in their syntactic surface structure. The languages under study here belong to two different categories of Talmy’s classification, namely verb-framed languages, which tend to express the basic components in the verb root and MANNER in satellites, and satellite-framed languages, which tend to express MANNER inside the verbal root and such basic components as PATH in a satellite. Therefore, we can contrast French and Spanish, verb-framed languages, as in (i), with English, Dutch and Russian, satellite-framed languages, as in (ii).

- i. a. FR *Il a traversé le lac (à la nage/en nageant)*
he has crossed the lake (with the swim-stroke / while swimming)
- b. ES *Cruzó el lago nadando*
crossed the lake swimming
- ii. a. EN *He swam across the lake*
- b. NL *Hij zwom het meer over*
he swam the lake over
- c. RU *On pereplyl ozero*
he over-swam lake

Indeed, Romance languages, such as French and Spanish, lexicalize the PATH inside the verb itself and leave the MANNER to be expressed through a satellite element, such as a gerund or an adverbial, while Germanic and

rain, therefore, is not analyzed for itself, and it is not quite clear whether its conceptual structure should be taken as limited to these two constituent elements nor should be applicable to other weather predicates. Recently, Bleotu (2012) explicitly extended the conceptual structure “FALL SOMETHING” to all weather verbs.

Considering that the verb *to rain* and, by extension, all weather verbs, have been explicitly treated as motion verbs, the question arises whether the conceptual structures proposed for the description of rain can account for the entire class of weather verbs across languages.

2. Motion inside weather domain

When dealing with weather verbs, we should bear in mind that on a semantic level they denote phenomena independent from human activity or control, and if they do express motion, it is necessarily autonomous motion, as in their atmospheric use no true agent can be expressed (nor conceived).

2.1. Motion verbs only?

The idea that weather verbs express motion events is definitely plausible for the most prototypical meteorological phenomenon, *i.e.* rain. Indeed, in the case of rain, but also of other precipitation phenomena, such as snow, hail and drizzle, there is no doubt that the phenomenon implies the movement of an entity, *i.e.* water under any form of condensation, along a top-down PATH from the sky towards the earth.

- (3) a. EN⁵ *It's raining, it's snowing, it's hailing, it's drizzling*
b. NL *Het regent, het sneeuwt, het hagelt, het motregent*⁶
c. FR *Il pleut, il neige, il grêle, il bruine*
d. ES *Está lloviendo / nevando / granizando / chispeando*
e. RU *Doždit, snežit, -, morosit*

Indeed, languages that do not possess a whole array of weather verbs often express precipitation through the combination of a substance noun and a motion verb, such as ‘go’ or ‘fall’. Russian, for example, has no specific weather verb for hailing but encodes this phenomenon through either of these verbs.

Slavic languages, on the contrary, tend to lexicalize the MANNER inside the verb root and encode the PATH respectively through directional complements, particles or prefixes.

⁵ We will use the ISO-639 language codes.

⁶ Whenever our examples illustrate the same phenomena in various languages, we do not provide explicit glosses.

- (4) RU *Idët / Padaet grad*
 goes / falls hail
 ‘It is hailing’

Moreover, even in languages that have specific precipitation verbs, it is often possible to express these phenomena through a motion verb and the atmospheric substance involved.

- (5) a. EN *Rain is falling from the sky*
 b. NL *De regen valt met bakken uit de lucht*
 the rain falls with buckets from the air
 ‘It is pouring rain’
 c. FR *Il tombe de la neige*
 it falls partitive snow
 ‘It is snowing’
 d. ES *Está cayendo granizo*
 is falling hail
 ‘It is hailing’
 e. RU *Idët / Padaet dožd’*
 goes / falls rain
 ‘It is raining’

Another argument in favor of the motion event analysis of precipitation verbs comes from the fact that, as already noted by Ruwet (1988), precipitation verb constructions can contain an explicit goal. In French, it can appear as a dative co-occurring with a locative PP or an adverb, as in (6), while in English and Dutch, it can be encoded through a particle, expressing either a location or a human being, as illustrated in (7).

- (6) a. FR *Il m’a plu sur la tête*
 it me has rained on the head
 ‘It has rained on my head’
 b. FR *Il m’a plu / neigé / grêlé dessus*
 it me has rained / snowed / hailed upon
 ‘It has rained / snowed / hailed on me’
- (7) a. NL *Het regent binnen*
 it rains inside
 ‘The rain is getting in’
 b. EN *We got rained on*

Italian provides yet another argument since its precipitation verbs display an ambiguous auxiliary selection, between ‘be’ and ‘have’ (cf. (8a)). As noted by Benincà & Cinque (1992: 158), the presence of an explicit goal entails the exclusive use of the auxiliary ‘be’, as in (8b), typically reserved to unaccusative motion verbs (such as *venire* ‘come’ which exclusively takes the verb ‘be’). The construction with ‘be’ is, therefore, interpreted as the displacement of a substance, while the use of ‘have’ implies the interpretation of a weather phenomenon as an activity (just as *camminare* ‘walk’ which exclusively takes the auxiliary ‘have’). Both cases thus fit the motion verb definition, the only real difference being in the directionality of the movement.

- (8) a. IT *È / Ha piovuto / nevicato / grandinato*
is / has rained / snowed / hailed
'It has rained / snowed / hailed'
- b. IT *Ci è / *ha piovuto / nevicato / grandinato sulla testa* (Benincà & Cinque 1992: 158)
us is / *has rained / snowed / hailed on-the head
'It rained/snowed/hailed on our heads'

If precipitation events do seem to behave as motion events, the question arises whether this also applies to other atmospheric phenomena. Some phenomena, like lightning for example, can indeed be encoded through a weather verb or a combination of a noun with the verb 'fall', as illustrated in (9). However, for wind, the use of this verb cross-linguistically indicates its disappearance or decrease in strength, as illustrated in (10).

- (9) a. NL *Het bliksemt*
it lightning-V
'It is lightning'
- b. ES *Está relampagueando / Están cayendo rayos*
are lightning-V / are falling flashes
'It is lightning'
- c. RU *Molnii padali v zemlju*
lightnings fell in soil
'Lightnings were falling onto the ground'
- (10) a. EN *The wind fell*
- b. NL *Als de wind valt, ...*
when the wind falls, ...
'When the wind stops blowing, ...'
- c. RU *Veter padaet*
wind falls
'The wind is calming down'

The main difference between lightning and thunder, on the one hand, and wind, on the other hand, has to do with the conceptualization of PATH. If bolts of lightning (and to some extent thunder) can be conceived of as motion along a top-down PATH, wind has a more complex PATH as no clear starting point nor end point can be identified and the orientation of movement is much more horizontal than vertical. This conceptual difference can also be observed in the compatibility of these verbs with directional particles, datives and PPs. As illustrated in (11a-b), a human being can function as the destination of a bolt of lightning, often inside a passive construction, while this is hardly possible with wind, though the latter can have its source and trajectory identified, as illustrated in (11c).

- (11) a. NL *Alpinist neergebliksemd in de Alpen*
alpinist down-lightning-V in the Alps
'Mountain climber struck by a bolt of lightning in the Alps'
- b. FR *L'alpiniste a été foudroyé*
the alpinist has been lightning-V
'The alpinist has been struck by a bolt of lightning'
- c. NL *Er woei een gure wind uit het Westen / door de straten / *op mij*

there wind-V a cutting wind from the West / through the streets / on me
 ‘A cutting wind blew from the West / through the streets’

Yet other phenomena, such as storms or thunderstorms, are completely incompatible with directional elements, as illustrated in (12). This might be due to the fact that these weather predicates encode complex atmospheric phenomena involving several FIGURES at a time, such as rain and wind in the case of storms, and thunder, lightning and rain in the case of thunderstorms. Therefore it seems impossible to specify one single given PATH.

- (12) a. NL **Het stormt / onweert binnen*
 it storms / thunderstorm-V inside
 b. NL **Alpinist neergeonweerd in de Alpen*
 alpinist down-thunderstorm-V in the Alps

However, there are also some weather verbs denoting stationary atmospheric phenomena involving FIGURES, such as dew, black ice, hoarfrost or fog. Although these phenomena can be encoded through verbs, they rather express the PRESENCE or APPEARANCE of a substance.

- (13) a. NL *Het dauwt / Het ijzelt / Het rijmt / Het mist*
 it dew-V / it black ice-V / it hoarfrost-V / it fog-V
 ‘There is dew / black ice / hoarfrost / fog’
 b. ES *Rocía / Escarcha*
 dew-V / hoarfrost-V
 ‘There is dew / hoarfrost’

Finally, we find weather verbs that denote phenomena for which no MOTION event nor FIGURE can be easily identified. This applies especially to temperature predicates. Indeed, the verb ‘freeze’, cross-linguistically attested, seems particularly difficult, although not impossible, to paraphrase through a light verb (be it a motion or a posture verb) and a meteorological noun (*cf.* Ruwet 1990: 54 for French).

- (14) a. EN *It is freezing / #Ice is appearing*
 b. FR *Il gèle / #Il apparaît de la glace*
 it freezes / it appears partitive ice
 c. ES *Está helando / #Hay hielo*
 is freezing / have-there ice
 d. NL *Het vriest / #Er is vorst aan de grond*
 it freezes / there is frost on the ground
 e. RU *Morozit / Stoit moroz*
 frost-V / stands frost

We can thus conclude that weather predicates can denote various types of motion events, vertically or horizontally oriented, one-, multi- or non-directional. Some possess a rather clear PATH, like in the case of precipitation verbs, and to some extent of lightning, thunder and wind. Complex weather phenomena, such as storms and thunderstorms, however, denote dynamic events in which no single PATH can be identified. We also find some weather predicates denoting events in which the conceptual MOTION component corresponds to the

PRESENCE or APPEARANCE of a substance. Thus, the class of weather verbs is rather heterogeneous with respect to their conceptual structure⁷.

2.2. Figure incorporation

According to Jackendoff (1983) and Talmy (2000), the verb ‘rain’ includes a constituent THING or FIGURE referring to the substance integrated into the meaning of the verbal root. As we have already shown *supra*, in the case of weather verbs denoting precipitation, it is indeed possible to argue that the verb root incorporates an NP denoting the substance falling down from the sky, thus presenting conflated lexicalization, equivalent to the combination of an explicit motion verb, such as ‘go’ or ‘fall’ and a meteorological noun.

A possible indication that precipitation predicates incorporate the FIGURE⁸ is that this FIGURE has to appear explicitly when it is modified, thus functioning as a cognate object⁹.

- (15) a. EN *It was raining cold rain*
b. FR *Il pleuvait une petite pluie froide*
it rained a tiny rain cold
‘It was raining little cold rain’
c. ES *Estaba lloviendo una lluvia torrencial*
was raining a rain torrential
‘It was raining torrential rain’
d. RU *Doždilo melkim doždëm*
rained fine rain
‘It was raining little rain’

However, not all weather verbs allow NP expansions. These expansions are possible with wind, but are ungrammatical (or at least very awkward) with many other phenomena, even if they clearly involve substances, as in the case of fog or dew. The same holds for thunderstorms involving several “substances”. Could these verbs incorporate something else than precipitation verbs?

- (16) a. NL *Er waait een harde wind*
there wind-V a strong wind
‘There blows a strong wind’
b. FR *Il vente un vent froid de fin d’octobre*
it wind-V a wind cold of end of October
‘A cold late October wind is blowing’
c. NL *??Er mist een dichte mist*

⁷ The heterogeneity of the linguistic domain of weather has already been suggested by Ruwet (1986, 1990) and extensively shown by Paykin (2010) and Meulleman & Stockman (2013) with respect to other characteristics.

⁸ From a diachronic point of view, meteorological verbs are rather denominal verbs resulting from a recategorization process of meteorological nouns. (For more details, cf. Paykin 2003 for Indo-European languages, and in particular French and English, and Barrajón López 2011 for Spanish).

⁹ For more information about the cognate object construction in the weather domain, cf. Calzado Roldán (2000) and Paykin (2010).

- there fog-V a dense fog
 d. NL ??*Er dauwt een lichte dauw*
 there dew-V a light dew
 e. NL ??*Er onweert een zwaar onweer*
 there thunderstorm-V a heavy thunderstorm

Interestingly, precipitation verbs can also appear cross-linguistically with NP expansions denoting atmospheric substances other than those that seem to be incorporated into the verbal root. As illustrated in (17), the verbs ‘drizzle’ and ‘rain’ may take nouns like ‘snow’, ‘sleet’, *etc.* The same construction is marginally possible with wind, but not with other weather phenomena, as shown in (18). The mere availability of this construction raises the question whether it can be claimed that precipitation verbs indeed incorporate the FIGURE.

- (17) a. EN *It was drizzling cold sleet*
 b. FR *Il pleuvait de la neige fondue*
 it rained partitive snow melted
 ‘It was raining melted snow’
 c. NL *Het regende hagel*
 it rained hail
 ‘It was raining hail’
 e. ES *Llovían bolas de granizo* (Calzado Roldán 2000: 87)
 rained balls of hail
 ‘It rained hailstones’
- (18) a. NL *Er waait een hevige storm op zee*
 there wind-V a heavy storm on sea
 ‘A heavy storm is raging at sea’
 b. NL **Er dondert een hevige regen*
 there thunders a heavy rain

Moreover, when genuine precipitation verbs are used in a metaphorical way, they describe the falling of non-meteorological substances, which may denote concrete objects, such as bullets, petals and bubbles, and abstract entities, such as critiques, applauses and news, as can be seen from (19). Some other weather phenomena may be used in this construction as well (*cf.* examples in (20)).

- (19) a. EN *It is raining bullets / It is snowing bubbles*
 b. NL *Het regent kritiek op de hervormingen*
 it rains critique on the reforms
 ‘It is raining critiques on the reforms’
 c. ES *Llovía bombas sobre la ciudad / Le llovieron los aplausos*
 rained bombs on the city / him_{dat} rained the applauses
 ‘It was raining bombs on the city / He was greatly applauded’
 d. FR *Il pleut des mauvaises nouvelles / Il grêle des coups / Il neige des pétales*
 it rains some bad news / it hails some hits / it snows some petals
 ‘It is raining bad news / It is hailing blows / It is snowing petals’
 e. RU *Doždilo puljami*
 rained bullets
 ‘It was raining bullets’

- (20) a. NL *Er waait een jonge sfeer in die dienst*
 there wind-V a young atmosphere in that department
 ‘There is a young atmosphere in that department’
 b. NL *Er donderde een kreet van verschikking door de zaal*
 there thundered a shriek of terror through the hall
 ‘A shriek of terror rent through the hall’

The mere fact that a weather verb can be used with nouns other than cognates, denoting atmospheric or metaphorical entities, concrete or even abstract ones, implies that at least in these particular cases the verb should incorporate something else than a FIGURE. What then is encoded in the verbal root?

2.3. What about MANNER?

We claim that the metaphorical use of precipitation verbs, as has been illustrated in (19), can best be accounted for if they express the way an object or abstract entity falls down. Indeed, this falling down might be continuous and rapid, as in the case of rain, slow, whirling around, as in the case of snow, or heavy with impact, as in the case of hail. Interestingly, in some languages, even non-precipitation verbs can be used to denote a specific way of falling down. For example, as illustrated in (21), in Dutch, the verbs ‘thunder’ and ‘lightning’ can be used to denote the falling of an object respectively with a lot of noise or very quickly. Notice that the PATH gets encoded explicitly in a satellite. The weather predicates themselves are used here as MOTION verbs incorporating MANNER rather than FIGURE.

- (21) a. NL *Het boek is naar beneden gedonderd*
 the book is to down thundered
 ‘The book thundered down’
 b. NL *Hij is van de trap gebliksemd*
 he is of the stairs lightning-V
 ‘He tumbled down the stairs’

However, as illustrated in (20), the metaphorical use of weather verbs is not restricted to the description of entities falling down. Indeed, in English and Dutch, two Germanic languages, the verbs ‘thunder’ and ‘lightning’ can also be used to denote the noisy or quick way vehicles move along a horizontal line, as can be seen in (22). In addition, both languages use the verb for ‘storm’ to describe an entity entering or leaving a place in an uncontrolled way, as in (23). Once again, in these constructions the PATH is made explicit through a satellite and the weather verb can be said to encode MANNER.

- (22) a. EN *The train thundered past*
 b. NL *De moto bliksemde voorbij*
 the motorcycle lightning-V past
 ‘The motorcycle flashed by’

- (23) a. EN *He stormed into / out of / through the room*
 b. NL *Hij stormde de kamer binnen / uit / door*
 he stormed the room inside / out / through
 ‘He stormed into / out of / through the room’

In addition, weather predicates denoting thunder and lightning can also be used metaphorically to express the emission of noise and light. The verb ‘thunder’ is cross-linguistically used for speaking in a noisy and violent way, as illustrated in (24). French even uses the verb ‘storm’ in similar contexts. In some languages, like Spanish and Dutch for instance, the verb ‘lightning’ preserves the flashing or blinking component in its metaphorical use, as in (25). In all these contexts, weather verbs express MANNER of a very peculiar kind of MOTION event with a clear human source.

- (24) a. EN *“Go away and never come back,” he thundered*
 c. NL *De generaal donderde de soldaat enkele bevelen toe*
 the General thundered the soldier a-few commands towards
 ‘The General thundered a few commands towards the soldier’
 c. ES *Tronó con su vecino por unos ruidos*
 thundered with his neighbor because some noises
 ‘He argued with his neighbor because of some noise’
 d. FR *Les prophètes avaient tonné sans cesse contre les grands*
 the prophets had thundered incessantly against the powerful-ones
 ‘The prophets had incessantly thundered against the powerful ones’
 e. FR *D’Alembert surtout criait, tempêtait, jurait*
 D’Alembert especially screamed, stormed, cursed
 ‘D’Alembert was especially screaming, ranting, cursing’
- (25) a. ES *Sus ojos relampagueaban de cólera*
 his eyes flashed of anger
 ‘His eyes flashed of anger’
 b. NL *Zijn gitzwarte ogen bliksemde in de nacht*
 his pitch-black eyes lightning-V in the night
 ‘His pitch-black eyes flashed in the night’

If weather predicates are used in metaphorical contexts mainly because of their capacity to express MANNER, the question arises whether we should not analyze weather predicates in general as verbs conflating MOTION and MANNER rather than MOTION and FIGURE. Indeed, as illustrated in (17), even in atmospheric contexts, weather verbs can express a precipitation event using a weather verb coupled with a FIGURE other than the one supposedly incorporated in the verbal root. However, as shown by the examples in (26), it is impossible to have this configuration when the explicit FIGURE is not compatible with the MANNER expressed by the verb. ‘Hailing’, for instance, is incompatible with ‘snow’, nor is ‘snowing’ compatible with ‘heavy rain’. Similarly, in metaphorical contexts, ‘rose petals’ cannot fall down heavily, nor can a ‘traditional atmosphere’ blow through a department.

- (26) a. EN **It is hailing snowflakes*
 b. FR **Il neige de grosses gouttes de pluie*

- it snows huge drops of rain
- (27) a. EN **It is hailing rose petals*
 b. FR **Il neige des coups*
 it snows blows
 c. NL **Er waait een traditionele sfeer in die dienst*
 there wind-V a traditional atmosphere in that department

If it can be argued that weather predicates are MOTION verbs incorporating MANNER, their cross-linguistic distribution should, at least to some extent, be in line with Talmy's binary typology between verb-framed and satellite-framed languages.

3. The impossible language classification

One of the most puzzling characteristics of weather verbs from a cross-linguistic point of view is a big discrepancy in their number from one language to another. Some languages, like Dutch, allow encoding through verbs for most atmospheric phenomena, including black ice, hoarfrost, fog and lightning, as in (28a), while others, like English and Russian, possess very few properly atmospheric verbal forms. Standard French displays very few weather verbs, while archaic, popular and regional varieties make a surprisingly rich use of them (*cf.* (28b)).

- (28) a. NL *Het ijzelt / het rijmt / het mist / het bliksemt*
 it black ice-V / it hoarfrost-V / it fog-V / it lightning-V
 'There is black ice / hoarfrost / fog / It is lightning'
 b. FR *Il verglace* (archaic) / *Il frimasse* (Québec) / *Il brumasse* (maritime) / *Il éclaire*
 (Wallonie, Picardie / Québec)
 it black ice-V / it hoarfrost-V / it fog-V / it lightning-V
 'There is black ice / hoarfrost / fog / It is lightning'

In addition, many languages have unexpected "lexical gaps" (*cf.* among others, Ruwet 1990, Glynn 2006). Romanian, for instance, has lexicalized forms for precipitations such as 'rain', 'snow' and 'drizzle', but not for 'hail', and also has weather verbs for such phenomena as 'thunder', 'lightning' and 'freezing'.

- (29) a. RO *Plouă / Ninge / Burnițează*
 rains / snows / drizzles
 'It is raining / snowing / drizzling'
 b. RO *Cade grindină*
 falls hail
 'It is hailing'
 c. RO *Tună / Fulgera*
 thunders / lightnings
 'It is thundering / There are lightnings'
 d. RO *Îngheață*
 freezes

‘It is freezing’

If weather verbs can be considered motion verbs, the question arises whether Talmy’s distinction between V-framed and S-framed languages can explain these cross-linguistic differences in availability of weather verbs. Indeed, some parallels can be drawn. Firstly, some metaphorical uses of weather verbs in Dutch encode MANNER in the verbal root, such as *waaien* in (30a), which corresponds in French to the encoding of MANNER in a satellite PP *en coup de vent*, as in (30b).

- (30) a. NL *Hij is komen binnenwaaien*
he is come in-wind-V
b. FR *Il est passé en coup de vent*
he is passed in gust of wind
‘He came as a gust of wind’

However, if Dutch weather verbs clearly encode MANNER in the verbal root in metaphorical contexts, it is questionable whether they do it in atmospheric contexts, as the specific MANNER of raining, for example, can be expressed by different prefixes. In these constructions, therefore, MANNER rather gets encoded in satellites and not in the verbal root as expected for Dutch motion verbs.

- (31) a. NL *Het motregent*
it dust-rains
‘It is drizzling’
b. NL *Het stortregent / plasregent*
it dump-rains / puddle-rains
‘It is pouring rain’

Secondly, within Talmy’s classification, if FIGURE, just like PATH, belongs to the core components of the motion event, we can expect it to be encoded in the verbal root more often in verb-framed languages than in satellite-framed ones. Perfectly in line with this hypothesis is the fact that Standard French displays a great number of verbal forms for raining events, which have a clear FIGURE, while it has only very few forms for atmospheric phenomena without a distinct FIGURE component. On the contrary, Dutch, which possesses a large array of weather verbs, has only a limited number of specific rain-verbs, all of which contain prefixes rather than different verb roots.

- (32) a. FR *pleuviner, pleuvioter, pleuvasser, etc.*
b. NL *motregenen, stortregenen, plasregenen etc.*

However, it is questionable whether the French verbs really indicate different FIGURES rather than differences with respect to MANNER. Indeed, the semantic distinctions between these verbs are operated through intensity and periodicity¹⁰.

Next to these two rather debatable arguments in line with Talmy's classification, there are also some discrepancies. From a semantic point of view, weather verbs behave in a very similar way across languages. In none of the languages under study are they limited to verbs denoting directional motion events nor to those denoting weather events involving clearly distinguishable FIGURES¹¹. In addition, they can all be used for expressing MANNER, both in atmospheric and metaphorical contexts. Moreover, the fact that precipitation verbs incorporating FIGURE are used in all languages under study, except Russian, cannot be explained by this bipartite language classification as Russian belongs to the same group as Dutch and English and to a different one from French and Spanish.

However, Talmy's language classification can apply to the metaphorical use of weather verbs when they are used in personal constructions to denote motion of a real participant. Indeed, in line with Talmy's classification, Germanic languages encode MANNER of directional motion in the verbal root insisting on the PATH in the satellite, as in (33a-b), while Romance languages rather lack this use, as shown in (33c). Interestingly, English uses metaphorically certain weather verbs not really attested in atmospheric contexts, such as *to storm*.

- (33) a. EN *He stormed into the room*
b. NL *Hij stormde de kamer binnen*
c. FR *#Il tempêta dans la pièce*

Other metaphorical uses though do not fit into Talmy's classification as they can be found in all languages. For example precipitation verbs encode MANNER in the verb root cross-linguistically, as has been illustrated in (19).

In conclusion, the use and availability of weather verbs across languages cannot be satisfactorily explained by Talmy's distinction between V-framed and S-framed languages. However, when these verbs are used metaphorically as directional motion verbs, the binary language classification holds to a certain extent.

¹⁰ The exact definitions of these verbs contain adverbial modification of the basic phenomenon rain. For example, *TLFi* and *Grand Robert* dictionaries define them as follows: *pleuviner* – to rain softly, in little drops, *pleuvioter* – to rain lightly, *pleuvasse* – to rain lightly, at irregular intervals (our translation).

¹¹ In fact, according to Eriksen *et al.* (2010), precipitation verbs cross-linguistically get most rarely encoded through a specific weather predicate precisely because, contrary to other events, the substance of precipitation can be conceived as a kind of participant.

Conclusions

Just like the most prototypical verb ‘rain’, weather verbs can indeed be analyzed as denoting motion events. These events, however, are rather heterogeneous as they can be vertically or horizontally oriented, one- or multi- directional, or even without any direction at all, dynamic or non-dynamic. Moreover, they can involve one or several substances or no substance at all. Weather verbs are thus far from being uniform in terms of their conceptual structure with respect to PATH and FIGURE. Talmy’s hypothesis about the incorporation of FIGURE inside weather verbs does not apply, as many weather events cannot make their FIGURE explicit through a cognate object, and those who do can encode all types of other FIGURES than the one supposedly incorporated in their verbal root.

What characterizes the majority of weather verbs is their systematic incorporation of MANNER, be it in metaphorical or strictly atmospheric use. Indeed, MANNER seems to be the core component even for weather events that do not contain a clear PATH or FIGURE and for those that are used metaphorically and, on the contrary, possess a clear source or goal.

Finally, considering that weather verbs are MOTION verbs incorporating MANNER, Talmy’s binary typology between verb-framed and satellite-framed languages should have applied to describe their distribution across languages but in fact it does not¹². All languages under study use weather verbs that incorporate MANNER directly in the verb root, although it is true that S-framed languages, such as Dutch and English, have some additional metaphorical uses of weather verbs as directional motion verbs. Still, we cannot really argue that the classification gets verified as weather verbs are most frequent in Dutch and less frequent in Russian, two languages belonging to the S-framed languages, while English, French and Spanish occupy an intermediate position. Thus, weather verbs in their atmospheric use differ from regular MOTION verbs and cross-linguistically display a peculiar puzzling behavior.

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¹² This is in line with recent cross-linguistic work showing various limits of the binary typology (*cf.* among others, Beavers *et al.* 2010, Croft *et al.* 2010 and Fagard *et al.* in press).

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