

Talking About the Weather: A Case Study of Precipitation Verbs

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(NOTE: Much of this research was carried out with Bonnie Krejci; see Krejci (2014).)

In the eyes of linguists, such [=weather] expressions are nearly as problematic and ill-behaved as the weather itself: they not only have many special properties, but from one language to the next the same phenomenon is coded linguistically in ways that are lexically or grammatically quite distinct. (Langacker 1991:365)

1 Challenges in the analysis of weather events: The perspective from English

- The standard way of talking about the weather in English is using an impersonal sentence:

(1) It is raining/hailing/sleeting/snowing.

- Such sentences have ‘expletive’ subjects and apparently lack any arguments (i.e. they are avalent).
- That is, weather verbs differ from most English verbs which take one, two, or three arguments.
- This property reflects several challenging properties of weather events.

— **Identifiability:** Depending on the meteorological phenomenon, it can be difficult to identify any participants in the event (e.g., becoming dusk). Perhaps it is possible to recognize a single participant (e.g., snow, rain).

— **Independence from the phenomenon:** The participant, to the extent it is identifiable, is not independent from the phenomenon itself: snow and rain do not exist outside of the event of snowing or raining (cf. Dowty’s independent existence Agent Proto-role entailment (1991)).

— **Selectional restrictions:** When a participant is expressed, weather verbs impose fairly strict selectional restrictions on it: outside of metaphorical uses, only snow can snow, only rain can rain.

(2) It rained an icy rain.

— **Semantic role:** It is hard to determine what semantic role to assign to this participant: when rain rains from the sky, is it acting or being affected?

- Weather sentences also pose challenges for syntactic theory; e.g., if weather verbs are avalent, then are they unaccusative or unergative? What is the status of the postverbal NP when expressed?

2 Encoding weather events: Crosslinguistic variability

- The challenges raised by the English data are only heightened in the context of crosslinguistic variability in the expression of weather events (Eriksen et al. 2010, 2012, 2015).
- Morphosyntactically, they take various forms: impersonal, existential, transitive, and intransitive.
- Eriksen et al. (2010) suggest that weather event expressions fall into three major types according to which element in the sentence lexicalizes the “weather” phenomenon:

— **The predicate type:** *It is raining.*

“where the meteorological event is encoded as a predicate, and where any eventual argument is either semantically empty or irrelevant to expressing the event as such” (Eriksen et al. 2010:596)

- (3) Es regnet.
it rain.3SG
‘It is raining.’ (German; Eriksen et al. 2010:566, (3))

— **The argument type:** *Rain is falling.*

“where the meteorological event is encoded as an argument, and where the predicate is largely semantically irrelevant to expressing the event as such, and functions more like a supportive [=light] verb” (Eriksen et al. 2010:596)

- (4) jí jà.
rain falls
‘It is raining.’ (lit. ‘Rain falls.’) (Fongbe; Eriksen et al. 2010:581, (33))

— **The argument-predicate type:** *It is raining rain.*

“where the meteorological event is encoded in the form of a predicate and an argument simultaneously” (Eriksen et al. 2010:596)

- (5) Mvula i-na-nya.
9.rain 9-CONT-rain
‘It is raining.’ (lit. ‘Rain is raining.’) (Digo; Eriksen et al. 2010:566, (4b))

- Although this talk focuses on English and to a lesser extent Romance languages, the insights gained suggest that there is some order underlying this apparent diversity in event encoding, and they should illuminate some of the sources of this diversity.

3 Encoding weather events: A sketch of the proposed solution

- There is latitude in the way certain chains of happenings in the world can be “construed” as events.
- In particular, precipitation phenomena can be construed linguistically as events in two ways—i.e. assigned two distinct event structures—with each one leading to a distinct event encoding:

SUBSTANCE EMISSION EVENT: *It rained (a light rain).*

Assigned an activity event structure; verb patterns as unergative

DIRECTED MOTION EVENT: *The rain rained down on my head.*

Assigned a directed motion event structure; verb patterns as unaccusative

- A verb lexicalizes a small number of attributes of the happenings it is used to describe so that a single verb can be used to describe two quite different event types.

4 Delimiting the scope of the investigation: Subclasses of weather events

- Reference to ‘weather verbs’ might suggest that the class is behaviorally homogeneous.
- Actually, it is constituted of several subclasses, whose members refer to weather phenomena which are quite different in critical respects, with these differences reflected in event encoding.
- **Evidence:** Across various languages the preferred encoding of precipitation events is distinct from that of temperature, stage of day, and certain other meteorological events.
- **Temperature events:** Eriksen et al. (2010:596) write: “Whereas events of temperature easily adopt the predicate type, precipitation events seem to be much more ‘resistant’.”

(6) TEMPERATURE VERBS: freeze, swelter, thaw, ...

— Temperature events are not easily understood as having any participants.

(7) Ha gelato stanotte.
have.PRS.3SG frozen tonight
‘It froze tonight.’ (Italian; Benincà & Cinque 1992:156, (2c))

— Precipitation events can be understood to have a participant: the relevant form of precipitation.

— Relatedly, Eriksen et al. (2010) find a range of event encoding strategies are used for precipitation events, but suggest that the argument strategy is the default.

- **Events of entering a certain stage of the day:** Such events use a different encoding strategy from precipitation events (Fábregas 2013, 2014, Manente 2007, Meulleman & Stockman 2013).

(8) STAGE OF DAY VERBS: *amanecer* ‘dawn’, *atardecer* ‘become dusk’, *anochecer* ‘become night’, ... (Spanish); *albeggiare* ‘dawn’, *annottare* ‘become night’, ... (Italian); *dawn*

— These events too are expressed via the predicate type; like temperature events, they are not easily understood as involving any participants.

(9) Aquí amanece tarde.
here dawn.PRS.3SG late
‘Here, the dawn is late.’ (Spanish; Fábregas 2013:7, (1))

— There is agreement that these verbs differ from precipitation verbs in grammatical behavior.

— There is disagreement as to their exact analysis, which will not be resolved here:

- Fábregas (2013, 2014): they are unergative verbs;
- Meulleman & Stockman (2013): they are unaccusative verbs of appearance.

• **Other weather events:** The encoding options of other such events (e.g., those involving thunder and lightning) need further investigation.

(10) blow, clear, fog (up), gust, howl, lightning, mist, roar, storm, teem, thunder

• These differences in event encoding most likely reflect differences in the nature of the chains of happenings in the world involved in temperature, stage of day, and precipitation events, which lead to their being construed as events in different ways, i.e. being assigned different event schemas, which, in turn, give rise to the different attested event encodings.

• **Focus of this talk:** Precipitation events (though other kinds of weather events deserve their turn!).

5 A closer look at the argument realization options of English precipitation verbs

• As a prelude to showing that precipitation events have two construals, I show that English precipitation verbs behave as a subtype of substance emission verbs, displaying analogous syntactic and semantic properties.

(11) PRECIPITATION VERBS: drizzle, hail, mizzle, pelt, pour, precipitate, rain, shower, sleet, snow, spit, spot, sprinkle, ...

(12) SUBSTANCE EMISSION VERBS: bleed, drip, drool, gush, ooze, seep, spew, sweat, ... (includes some bodily emission verbs)

• To be in a position to draw out these parallels, I first show that weather *it* is not an expletive.

5.1 Weather *it* is not an expletive

• Sentences such as (13) are said to be impersonal with an expletive subject, inserted purely for syntactic reasons.

(13) It is raining/snowing/hailing.

• Various researchers have argued against this position, noting that weather *it* does not always behave like an expletive.

• They propose instead that ‘weather’ *it* is selected by the verb and assigned a semantic role, either as a nonreferential ‘quasi-argument’ or a referential argument.

True expletive	Quasi-argument	Referential argument
Quirk & Greenbaum 1973	Chomsky 1981	Bolinger 1973, 1977
Huddleston & Pullum 2002	Rizzi 1990	Bennis 1986
Seppänen 2002		Pesetsky 1995
		Stephens 2007

Evidence: Contrast precipitation verbs with raising verbs like *seem* or *appear* which take an expletive *it* subject when they take a *that* sentential complement.

(14) It seems that Tracy jogged yesterday.

• **Distributional evidence:** Weather *it* appears in positions that are taken to be argument positions; typically, they are restricted to animate/effector arguments.

— **Control verbs:** Raising verbs cannot appear under control verbs like *try*, which semantically restrict their subjects, but weather verbs may (Chomsky 1981, Pesetsky 1995, Stephens 2007).

- (15) a. It tried [_ to rain today] but the sun came out! (web)
b. The first in ten summers that it refused [_ to rain]. (web)
c. * It tried/refused [_ to seem that Tracy jogged].

— **Purpose clauses:** Raising verbs cannot appear with purposes clauses, which also semantically restrict their subjects, but precipitation verbs may (Stephens 2007).

- (16) a. That's why it rains, [_ to sedate you]. It rains [_ to turn you numb]. (web)
b. # It only seems that Tracy jogged [_ to annoy us]. (on intended reading)

— **Subjects of imperatives:** Weather *it* can be the addressee in an imperative (Stephens 2007).

- (17) a. Please don't rain. (web)
b. Please rain this weekend. (web)
c. * Please (don't) seem that Tracy jogged.

• **Genitive complement to a noun:** Expletives cannot occur as such complements (Huddleston & Pullum 2002:1261). This holds of the *it* of raising verbs, but not the *it* of precipitation verbs.

- (18) a. Such as torrential rain, hail, and sun within a matter of hours in one place and its tendency to rain all the way through summer (web)
b. It had its chance to rain all this week (web)
c. * Its tendency to seem that Tracy jogs. (cf. Tracy's tendency to seem to jog.)

• **Accusative case assignment:** Precipitation verbs often take objects (Ruwet 1991), but raising verbs do not. By Burzio's Generalization (1986), this property suggests that precipitation verbs should also take 'thematic' (i.e. argument) subjects.

- (19) a. It rained a light thin rain. (COCA)
 b. It rained a few drops of rain. (COCA)
 c. * It seemed Tracy's awakening. (cf. It seemed that Tracy awakened.)

• **Lexical subjects:** Relatedly, the subject of a precipitation verb need not always be an expletive; in contrast, raising verbs do not permit such subjects.

- (20) a. The clouds rained blood. (web)
 b. The night the twins came to our town, the skies rained ice. (web)
 c. * The supposition/fact seemed that Tracy jogged.

• **Discourse reference:** Weather *it* can be referenced later in discourse by nonexpletive *it* (Stephens 2007); raising *it* cannot be.

- (21) a. It only began to rain in earnest just as we got to the gate. Very thoughtful of it, I'm sure! (Jespersen 1965:241)
 b. * It seemed that Tracy jogged to the store. How thoughtful of it!

Conclusion: Weather *it* is not a true expletive, but is an argument of the verb.

PREVIOUS PROPOSALS CONCERNING ITS SEMANTICS:

- the environment/ambient conditions (Bolinger 1973:261, 1977:77–78)
- atmospheric role (Rizzi 1990:86)
- natural or abstract force (Pesetsky 1995:111)

PROPOSAL: Based on parallels with substance emission verbs, the subject of a precipitation verb, typically weather *it*, like the subject of a substance emission verb, is an emitter—the **source** from which a substance is emitted.

5.2 Parallels with substance emission verbs

Precipitation verbs show two key linguistic properties of substance emission verbs.

• **Limited range of subjects:**

- (22) Emission verbs involve the emission of a substance that is particular to some entity, and consequently, these verbs take a very limited range of subjects . . . There is a sense in which verbs in this class describe intrinsic properties of their subjects. (Levin 1993)

Precipitation verbs take this property to an extreme: They almost exclusively take *it* as their subject.

• **Source/substance alternation:**

- The source is the subject, with the emitted substance optionally expressed as object, as in (23a).
- The emitted substance is the subject, with a directional PP often denoting the source, as in (23b).

- (23) a. **The well**_{source} gushed (*oil*_{substance}).
 b. *Oil*_{substance} gushed **from the well**_{source}.

— Precipitation verbs display the same pattern, as in (24).

- (24) a. **It/the sky**_{source} rained (*icy water*_{substance}) when I left from work by car. (web)
 b. *Icy water*_{substance} rained **from high heaven**_{source} onto my body! (web)

EVIDENCE THAT THEY SHOW THE SAME PATTERN: Specifics of grammatical behavior

SUBSTANCE EMISSION VERBS:

- Unergative when taking a source subject.
- Unaccusative when taking a substance subject.

PRECIPITATION VERBS:

- Unergative when taking weather *it*—a source of precipitation—as subject.
- Unaccusative when taking the precipitation—an emitted substance—as subject.

5.2.1 Unergativity with source subject

Although the source argument of substance emission verbs is nonagentive, these verbs are nonetheless unergative when the source is the subject (L&RH 1995).

Precipitation verbs with source subjects also behave as unergatives.

(25) Source as subject:

- a. **The well**_{source} gushed (*oil*_{substance}).
 b. **It**_{source} rained (*icy water*_{substance}) when I left from work by car. (web)

• **Cognate objects:** Unergative, but not unaccusative verbs, may take cognate objects, as well as their hyponyms. Substance emission verbs are found with such objects, as are precipitation verbs.

- (26) a. Kim smiled a beatific smile. (unergative)
 b. * Kim fainted a terrifying faint. (unaccusative)
- (27) a. My 2nd child was like a slug—**oozing a constant stream of ooze**.
 (<https://answers.yahoo.com/question/index?qid=20120618093506AAUYuH7>)
 b. It's **dripping a little drip** but boy, a drip can fill a small bucket in 48hrs.
 (<https://www.youtube.com/watch?v=XAPnepUbWvE>)
- (28) a. An hour later it **rained, a cold, dreary rain** that makes me want to huddle under the covers. (L. F. Hellmann, *Jump Cut*, Poisoned Pen Press, Scottsdale, 2016, p. 258)
 b. It **snowed a foot of new snow** that first night. (D. Howard, “Snowed In”, *Meridian Magazine*, December 27, 2016; <http://ldsmag.com/snowed-in/>)

- **Resultatives:** Substance emission and precipitation verbs pattern with unergatives in requiring result XPs to be predicated of nonselected objects. That is, the result XP cannot be predicated directly of their subjects; rather, this requires the mediation of a ‘fake’ reflexive object.

— Background: The predication options of the result XP

- (29) Result XPs are predicated of an ‘underlying’ object:
- The blacksmith pounded the metal_i flat_i. (transitive)
 - The metal_i was pounded *t*_i flat_i. (passive of transitive)
 - * The blacksmith pounded on the metal_i flat_i. (conative construction)
- (30) Result XPs can only be predicated of the subject via a ‘fake’ reflexive object:
- * We_i yelled hoarse_i. (unergative)
 - We yelled ourselves hoarse. (unergative)
- (31) Result XPs predicated of nonselected objects:
- The dog barked them_i awake_i. (unergative)
 - * The bottle broke my fingers_i bloody_i. (unaccusative)
(meaning: My fingers got bloody from the bottle’s breaking.)

— Result XPs with emission and weather verbs:

- (32) RESULTATIVES WITH FAKE REFLEXIVES: Substance emission verbs
- The creature [a squid] bucks and tosses, **spewing itself** dry on the journey up, a mess of black mucus. (C. Hosking, *Ash Rain*, 2004; <https://books.google.com/books?isbn=1862549842>)
 - Daisy paused for a moment, thoughtfully righting the vaporizer that still lay across George’s crowded work table, though it had long ago **gushed itself** dry. (A. Birstein, *The Sweet Birds of Gorham: A Novel*, 2015; <https://books.google.com/books?isbn=1497697344>)
 - Then four of the last bottles were so over-carbonated that they **gushed themselves** empty. (“Carbonation problem”, Northern Brewer Homebrew Forum, February 6, 2008; forum.northernbrewer.com)
- (33) RESULTATIVES WITH FAKE REFLEXIVES: Weather verbs
- It had **rained itself** dry; there was no dust, no evening fog, no breeze, but a dark purple and blue evening sky. (L. B. Bodley, *Goethe and Zelter: Musical Dialogues*, Ashgate, Chapter 258, 2017; <https://books.google.com/books?isbn=135156532X>)
 - By the time it gets to us it’s either **snowed itself** dry or warmed up enough to be rain. (<http://boardgamegeek.com/geeklist/63881/your-snowed-list>; accessed 1/22/16)
 - Thankfully it **rained itself** dry yesterday and today was a lot about the sunny times. (N. Hughes, The Course Whisperer — Vallnord, Andorra Course Walk, July 24, 2013; <http://www.pinkbike.com/news/The-Course-Whisperer-vallnord-andorra-course-walk-2013.html>)

(34) RESULTATIVES WITH NONSELECTED OBJECTS: Weather verbs

It is so late, it has **snowed us** into a dream. (D. Abu-Jaber, *The Language of Baklava*, Anchor, New York, 2006, p. 122)

• **Causative uses:** Neither substance emission, nor precipitation verbs show causative uses with the source as object (= causee); compare unaccusative verbs which may show the causative alternation.

- (35) a. *The workers gushed the fountain.
b. *God/the high humidity rained it/the sky.

• **Adjectival passive participles:** May be predicated of ‘subjects’ of unaccusative verbs, but not unergative verbs. Neither substance emission verbs, nor precipitation verbs allow such participles to be predicated of the source.

- (36) a recently arrived visitor (unaccusative); *a recently run athlete (unergative)

- (37) a. *the violently gushed well
b. *the recently snowed sky/clouds

• **Prepositional (or pseudo-) passives** (Perlmutter & Postal 1984:100–103): Both substance emission and precipitation verbs allow such passives, which are found with unergative, but not unaccusative verbs.

- (38) a. *This beach was arrived at by aliens. (unaccusative)
b. This bed was slept on by George Washington. (unergative)

- (39) a. ... a large, dirty man of about thirty, wearing a **sweated-through** T-shirt, detached himself from a nearby table full of similar friends ... (G. Gordon Liddy, *Will: The Autobiography of G. Gordon Liddy*, St. Martin’s, New York, 1996, p. 71)
b. The man sweated through the T-shirt.

- (40) a. Back at Alumnae House I hung my **rained-on** clothes around my tiny room ... (E.A. Taylor, *Murder at Vassar*, St. Martin’s, New York, 1987, p. 131)
b. It/The heavy clouds rained on my clothes.

• **There-insertion:** Some but not all unaccusative verbs allow *there*-insertion, but unergatives do not. Substance emission verbs do not allow *there*-insertion when the source is the postverbal NP; neither do precipitation verbs.

- (41) a. *There gushed a magnificent well.
b. *There rained it/a heavy gray sky/some thick dark clouds.

5.2.2 Unaccusativity with substance subject

When substance emission verbs take the substance as their subject, they behave as unaccusative verbs (L&RH 1995); precipitation verbs pattern the same way.

(42) Substance as subject:

- a. *Oil*_{substance} gushed **from the well**_{source} (into the tank).
- b. *Icy water*_{substance} rained **from high heaven**_{source} onto my body! (web)

• **Cognate objects:** When the substance is the subject, neither substance emission verbs, nor precipitation verbs may take cognate objects.

- (43) a. * Oil gushed a gush from the well.
b. * Icy water rained (a) rain from the sky.

• **Resultatives:** When the substance is the subject, substance emission verbs cannot appear with nonselected objects; neither can precipitation verbs.

- (44) a. * Oil gushed the well dry.
b. * Heavy drops rained the sky clear.

• **Directional phrases:** When the substance is the subject, substance emission verbs can appear with directional complements of various types predicated of their subject, as can precipitation verbs.

- (45) a. Oil gushed up (from the well).
b. Icy water rained down (from the sky) onto the parched fields.

• **Causative uses:** When the substance is the subject, both substance emission and precipitation verbs resist causativization. Thus, their behavior parallels that of directed motion verbs, though a locative PP ameliorates the judgments in (46) as it does with manner of motion verbs.

- (46) a. ?? The boy gushed liquid from the rubber toy.
b. He [God] rained water from the heavens (web)
- (47) a. * The pilot ascended the plane to cruising altitude.
b. Wilson skittered the cassette across his desk. (K. Mitchell, *A Portion for Foxes*, St. Martin's, New York, 1995, p. 57)

• **Adjectival passive participles:** Substance emission verbs allow such participles to be predicated of the substance; precipitation verbs do too.

- (48) the gushed-out oil/the rained down water

- **There-insertion:** Both types of verbs allow *there*-insertion when the postverbal NP is the substance, particularly in the presence of a directional PP.

- (49) a. She passed a spring, set back deep in a hollow where the water winked and shifted like an eye, and there **gushed** out into the night air **the deep earth smell of black loam**. (E. Spencer, *The Voice at the Back Door*, McGraw Hill, 1956; LSA Press, Baton Rouge, LA, 1984, p. 234)
- b. Forthwith there **spewed** out from the web **a host of miniature black spiders** who promptly retreated into the myriad passageways in the stone foundation of the house. (E.S. Muldrow, *Marmalade*, Sunstone Press, Santa Fe, NM, 2004, p. 116–117; <https://books.google.com/books?isbn=0865344345>)
- c. There rained a ghastly dew. (web)

5.2.3 A summary of the parallel properties

	Source as subject			Substance as subject	
	Precipitation verb		Emission verb	Precipitation verb	Emission verb
	<i>it</i>	lexical subj.			
Takes cognate object	✓	✓	✓	*	*
Nonselected obj resultative	✓	✓	✓	*	*
Causative	*	*	*	?	?
Adj. passive part.	*	*	*	✓	✓
<i>There</i> -insertion	*	*	*	✓	✓

- Substance emission verbs and precipitation verbs are strikingly parallel in their behavior once *it* is analyzed as an emitter.

6 Assessing the significance of the English data for the construal of precipitation events

- Each event encoding—i.e. argument realization—option for a precipitation event reflects the assignment of a different event structure to the event due to its particular construal.

- (50) a. SOURCE AS SUBJECT: **It**_{source} rained (*icy water*_{substance}).
- b. SUBSTANCE AS SUBJECT: *Icy water*_{substance} rained **from high heaven**_{source}.

- An event structure consists of the pairing of a ‘root’ with an event schema (RH&L 1998).
 - EVENT SCHEMA: structural component of meaning, representing an event type;
 - it is drawn from a limited inventory encompassing the event types encodable in language;
 - it is often defined in terms of primitive predicates, forming a predicate decomposition.
 - ROOT: a sound/meaning pairing, representing a verb’s core lexicalized meaning;
 - characterized by an ONTOLOGICAL TYPE, chosen from a fixed set of options, including (result) state (*dry*), container/location (*bottle*), manner (*wipe*);
 - the set of roots is in principle open-ended.

- The event schema—root association is determined by the root’s ontological type; this association could be viewed in lexical, syntactic, or constructional terms.
- Event structures are associated with a morphosyntactic frame—or event encoding—by argument realization principles, which are sensitive to the event structure’s components.

6.1 The source subject pattern

- This pattern represents the basic event structure and related event encoding pattern used for emission events in general—whether substance, light, sound, or smell (L&RH 1995).

- (51)
- The candle flickered/glowed. (light emission)
 - The stream babbled/burbled/gurgled. (sound emission)
 - The trash reeked. (smell emission)

- It involves an ‘activity’ (non-scalar change) event structure (Levin 1999, RH&L 1998, 2010).
- This event structure represents a substance emission construal of a precipitation event with the source understood as the emitter.
- Like emitters and the argument of an activity event structure, it is realized as subject.
- The unergative behavior of precipitation and substance emission verbs is consistent with this event structure and argument realization.
- When weather verbs take a non-*it* substance subject and no directional PP (e.g., *The sky rained huge drops.*), they pattern as with an *it* subject—i.e. exemplifying the substance emission construal.

6.2 The substance subject pattern

- This pattern represents a directed motion construal of both emission and precipitation events.
- The availability of this construal makes sense for each event type:
 - precipitation moves from the sky to the ground due to gravity—an instance of directed motion
 - the emission of a substance imparts a force to the substance setting it in motion
- Directed motion events have theme and path participants, hence the presence of a source or other directional phrase found in the substance subject pattern.

- (52)
- * Heavy drops rained.
 - Heavy drops rained from the sky.
 - Heavy drops rained onto the ground (from the sky).

- In this pattern, then, the substance qualifies as the theme of the event, and, hence, like a theme it is realized as a (surface) subject.

- The actual event structure with substance emission and precipitation verbs involves what RH&L (2001) call ‘event coidentification’, which brings together two temporally dependent subevents, an activity—i.e. emission—subevent with a directed motion—or scalar change—subevent.

Coidentified events may be seen as predicating properties of the same event variable (L&RH 1999).

This analysis is also attributed to the directed motion use of manner of motion and sound verbs.

- The unaccusative behavior of precipitation and substance emission verbs in the substance subject pattern is consistent with a directed motion event structure and argument realization (L&RH 1995).
- **Conclusion:** The two argument realization patterns and the event structures they each represent are reflexes of distinct construals of precipitation happenings.

Note: The behavioral patterns shown by precipitation verbs are those associated with verbs with ‘manner’ roots, even if these verbs might seem to ‘incorporate’ a theme/figure in their names (Jackendoff 1983, Talmy 1975); see Meulleman & Paykin (2016) for some discussion.

7 Precipitation events in Romance languages

Further support for the analysis is provided by data from Romance languages, especially Italian, which suggest the same two construals and associated event encodings are attested in them as well.

7.1 Controversy over the status of weather verbs

- Precipitation events have figured intermittently in the literature on unaccusativity in Romance.
- There has been controversy over whether weather verbs are unaccusative or unergative (e.g., Benincà & Cinque 1992, Bleotu 2012, 2013, Meulleman & Stockman 2013, Paykin 2010, Ruwet 1992).

EXAMPLES:

— Ruwet: In French, they are unaccusative across the board.

— Benincà & Cinque: In Italian, some are unergative; others are either unaccusative or unergative.

- Although the controversy might be attributable in part to the issues surrounding the choice and application of unaccusativity diagnostics, the controversy might dissolve once it is recognized that:

— Stage of day events are fundamentally different from precipitation events (e.g., Fábregas 2013, 2014, Meulleman & Stockman 2013); see section 4.

— Multiple construals of precipitation events are available in Romance languages too (e.g., Benincà & Cinque 1992, Manente 2007, Meulleman & Paykin 2016).

7.2 Precipitation events in Italian

- Benincà & Cinque (1992) note the Italian weather verbs that show dual behavior are understood:
 - as ‘activity’ verbs when unergative
 - as directed motion verbs when unaccusative

- Benincà & Cinque use auxiliary selection as a diagnostic for unaccusative vs. unergative status:
 - Unaccusative verbs select the auxiliary *essere* ‘be’.
 - Unergative verbs select the auxiliary *avere* ‘have’.

- PREDICTION: When taking *essere* ‘be’, precipitation verbs should have the substance as subject.

CONFIRMATION: When the substance is the subject, as shown by the verb agreement in the (b) sentences in (53) and (54), the auxiliary is *essere*.

- PREDICTION: When found with a directional phrase, precipitation verbs should take *essere* ‘be’ and not *avere* ‘have’.

CONFIRMATION: The presence of an overt directional phrase as in the (c) sentences in (53) and (54) is only possible when the auxiliary is *essere*.

(53) Auxiliary *essere* ‘be’:

- È piovuto.
be.PRS.3SG rained
‘It rained.’
- Sono piovute pietre.
be.PRS.3PL rained stones
‘It rained stones.’
- Sei forse piovuto dal cielo?
be.PRS.2SG perhaps rained from.the sky
‘Have you perhaps rained from the sky?’

(Benincà & Cinque 1992:156, (3))

(54) Auxiliary *avere* ‘have’:

- Ha piovuto.
have.PRS.3SG rained
‘It rained.’
- *Hanno piovuto pietre.
have.PRS.3PL rained stones
‘It rained stones.’
- *Hai forse piovuto dal cielo?
have.PRS.2SG perhaps rained from.the sky
‘Have you perhaps rained from the sky?’

(Benincà & Cinque 1992:156, (4))

- (55) è grandinata una fitta grandine su tutto il territorio
be.PRS.3SG hailed a thick hail on all the territory
‘its been hailing a thick hail on the whole territory’
(Google search, 28/10/2015; Melloni & Masini 2017:235, (28c))

- *essere* ‘be’ is found in the presence of a directional phrase even when the substance is left unexpressed (Italian allows ‘pro-drop’).

- (56) Mi è /*ha piovuto sulla testa.
 I.DAT be.PRS.3SG have.PRS.3SG rained on.the head
 ‘It rained over [on] my head.’ (Sorace 2000:878, (49))

- Further evidence for unaccusativity when the substance is subject comes from the cooccurrence of *ne* cliticization (Belletti & Rizzi 1981, Burzio 1986) and *essere* ‘be’.

- (57) Ne è piovuta molta, di pioggia acida / di acqua.
 NE be.PRS.3SG rained much of rain acid / of water
 ‘There was a lot of acid rain/water (rain) coming down.’ (Melloni & Masini 2017:235, (31))

- The observed correlations are consistent with previous observations about how auxiliary selection lines up with event structure (Sorace, 2000, Van Valin 1991):

- (58) Activity/process verbs take the auxiliary ‘have’.
 State and change of state verbs take the auxiliary ‘be’.

- The same auxiliary selection pattern occurs with Italian manner of motion verbs: They take *essere* ‘be’ when describing a directed motion event, but *avere* ‘have’ when describing an activity.

- (59) a. Giorgio ha corso con uno stile perfetto /*a casa.
 George have.PRS.3SG run with a perfect style A house
 ‘George has run in a perfect style/to the house.’
 b. Giorgio è corso a casa /*con uno stile perfetto.
 George be.PRS.3SG run A house with a perfect style
 ‘George has run to the house/in a perfect style.’
 (Benincà & Cinque 1992:157, (6))

- Benincà & Cinque note that weather verbs that are always unergative are not precipitation verbs.

- (60) a. UNERGATIVE ONLY: *tuonare* ‘thunder’, *lampeggiare* ‘lightning’, *gelare* ‘freeze’
 b. VARIABLE: *piovere* ‘rain’, *nevicare* ‘snow’, *grandinare* ‘hail’, *diluvare* ‘pour’
 (Benincà & Cinque 1992:158–159)

- (61) Ha /*è gelato stanotte.
 have.PRS.3SG be.PRS.3SG frozen tonight
 ‘It froze tonight.’ (Benincà & Cinque 1992:156, (2c))

- Although *tuonare* ‘thunder’ and *lampeggiare* ‘lightning’ in (60a) do not fall into the temperature or stage of day verb classes, they too describe weather happenings where it can be difficult to distinguish a participant from the event.

(NOTE: Meulleman & Paykin (2016:64) point out ‘thunder’ in a sound emission sense is found in directed motion contexts.)

- **Conclusion:** Italian too shows two construals of precipitation events: (i) with the substance as subject, as a directed motion event, (ii) as an activity, presumably specifically as a substance emission event, but more investigation is needed to confirm this.

8 Conclusion: Checking the weather

- Weather—or meteorological—expressions encode happenings with some challenging properties.
- Precipitation happenings, in particular, are open to more than one construal. English construes them in two ways, as (substance) emission events and as directed motion events. These construals are behind the varied expressions attested with English precipitation verbs.
- Some controversy over whether precipitation verbs are unaccusative or unergative dissolves because these construals line up differently with unaccusative vs. unergative behavior.
- The considerable crosslinguistic variability in weather event encoding might be understood once the repercussions of the dual construals are considered in the context of a language's morphosyntactic resources for event encoding (cf. Beavers, Levin & Tham 2010 on motion events).
- Much more remains to be investigated in the domain of weather events in English and beyond.

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