

- b. It rained a few drops of rain. (COCA)
- c. * It seemed Mary's jogging.

Finally, Stephens (2007) notes that weather *it* can be addressed in an imperative, as in (6), and *it* can be referenced in later discourse, showing up as a non-expletive, shown in (7). Again, raising verbs, which take true expletive subjects, do not share these properties.

- (6) a. Please don't rain. (web)
- b. Please rain this weekend. (web)
- c. * Please (don't) seem that Mary jogged.
- (7) a. It only began to rain in earnest just as we got to the gate. Very thoughtful of it, I'm sure! (Jespersen, 1965, p. 241)
- b. * It seemed that Mary jogged. How thoughtful of it!

Taken together, these examples suggest that weather *it* is not a true expletive, but is instead semantically selected by the verb. If this is the case, it raises the question of what the semantic role of the subject is. Other researchers argue that the subject of a weather verb semantically encodes the environment or ambient conditions (Bolinger, 1977), an atmospheric role (Rizzi, 1990), or a natural or abstract force (Pesetsky, 1995). Instead, I propose that weather verbs assign a *source* theta role to their subjects, by analogy with substance emission verbs.

3. Parallels with substance emission verbs. I propose that weather verbs form a subset of substance emission verbs, like *gush*, *drip*, *bleed*, *spew*, and *seep*. Levin (1993) describes emission verb as involving “the emission of a substance that is particular to some entity... consequently, these verbs take a very limited range of subjects.” Similarly, weather verbs take a limited range of subjects, generally restricted to *the sky* or *clouds*, when a lexical subject is allowed at all.

A further similarity is that weather verbs and substance emission verbs both undergo the source/substance alternation. In one construction, the subject of a substance emission verb denotes the source of the emitted substance, with an optional object denoting the substance, as in (8a). In the alternate construction, the substance that is emitted is the subject, with an obligatory directional prepositional phrase denoting the source (8b). If the *it* of weather expressions denotes the source of precipitation, then weather verbs can be said to display the same pattern, as in (9).

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

The two verb classes are thus analogous in being able to appear in both constructions.

Another similarity concerns the intransitivity class of the verbs in each construction. Emission verbs are unusual in that, when the source is the subject, they behave as unergatives, and when the substance is the subject, they behave as unaccusatives (Levin & Rappaport Hovav, 1995). This means that, in the version of (8a) without the object, *the well* is not an agent, but the verb nevertheless behaves as an unergative, according to five common diagnostics for intransitivity class. Analogously, weather verbs with source subjects, like (9a), also behave as unergatives under the same diagnostics.

The first diagnostic for unergativity is whether the verb can take a (cognate) object. If the verb is able to assign accusative case to an object, then its subject must have originated in a subject

position. Verbs of substance emission are able to assign accusative case to cognate objects and non-cognate objects, as in (10a); weather verbs can also, as in (10b).

- (10) a. The well gushed (a huge gush/oil).
b. It rained (a heavy rain/a heavy shower). (web)

The next diagnostic concerns resultatives, which may only be predicated of objects. Verbs of substance emission (11a) and weather verbs (11b)-(11c) pattern with unergatives in needing fake reflexives or non-subcategorized objects in order to form resultatives, indicating that the subject originated in a subject position.

- (11) a. The well gushed *(itself) dry.
b. It rained *(itself) silly. (web)
c. It rained **us** out of the pool. (web)

Additionally, neither verbs of substance emission (12a) nor weather verbs (12b) may appear in the causative alternation, which is available only for unaccusative verbs.

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

Similarly, only unaccusative verbs can form adjectival passive participles. Emission verbs cannot form them, as in (13a), nor can weather verbs, as in (13b).

- (13) a. * the gushed well b. * the snowed sky/clouds/heavens

Finally, some but not all unaccusative verbs allow *there*-insertion, in which the underlying object remains low and the subject position is filled by *there*. Unergatives never allow *there*-insertion. Verbs of substance emission pattern with unergatives in not allowing *there*-insertion, shown in (14a); weather verbs behave the same way, shown in (14b).

- (14) a. * There gushed a well. b. * There rained it/a sky/some clouds.

These examples illustrate that both verbs of substance emission and weather verbs pattern with unergatives when they occur in the construction with the source argument as the subject.

In further parallel with substance emission verbs, weather verbs with the substance as the subject behave as unaccusatives, with respect to the same diagnostics. First, when the substance is the subject, neither substance emission verbs (15a) nor the weather verbs (15b) may take cognate objects.

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

Next, substance emission verbs can appear with the postverbal result *down*, but they cannot occur with a fake reflexive, shown in (16a); neither can weather verbs, shown in (16b).

- (16) a. Oil gushed (*itself) down from the well.
b. Icy water rained (*itself) down from the sky.

Both substance emission verbs (17a) and weather verbs (17b) pattern with unaccusatives in having the ability to be causativized.

- (17) a. The boy gushed liquid from the rubber toy.
b. He [God] rained water from the heavens (web)

Additionally, substance emission verbs pattern with unaccusatives in allowing adjectival passive participles (18a); weather verbs also form them (18b).

- (18) a. the gushed(-out) oil

- b. the rained down water

Finally, both classes of verbs pattern with unaccusatives in allowing *there*-insertion (19).

(19) a. There gushed forth from the staff twelve fountains. (web)

- b. There rained a ghastly dew. (web)

These examples show that substance emission verbs and weather verbs are strikingly parallel in their behavior. These parallels are left unexplained if *it* is an expletive, but they can be captured under an analysis where *it* is assigned a source theta role by its verb.

4. Is *it* referential? Chomsky (1981) argues that weather *it* is a quasi-argument, and, “as a matter of grammatical principle”, there is no entity that can serve as its denotatum. He presents example (20) as evidence that *it* cannot be questioned, and therefore does not have a referent.

(20) A: It’s raining out today.

B: #What’s raining out today? (Chomsky, 1981, Ch. 6)

However, (20)’s infelicity does not help determine whether *it* is referential. Suppose *it* does refer, but that there is only one entity that can serve as its denotatum. *What* presupposes that there is more than one possible denotatum available for *it*, so the question will still be infelicitous. This leaves open the possibility that *it* is a true referential argument.

5. Conclusion. I have shown that the *it* of English weather expressions behaves differently from the expletive of raising verbs like *seem*, and I have argued that this is because weather verbs do semantically select a subject, one which may be referential. Further, I claim that weather verbs assign a source theta role to their subjects. These verbs are semantically and syntactically analogous to verbs of substance emission, motivating their inclusion in that class.

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