Agentivity, animacy, prototypicality and specialized meaning

Malka Rappaport Hovav
The Hebrew University of Jerusalem

Beth Levin
Stanford University

Many English verbs are *variably agentive*: they are found with either agentive or non-agentive subjects, as illustrated with *push* in (1).

1. a. Pat pushed the stroller.
   b. The current pushed the boat.

For most English verbs the prototypical use – the first use that comes to mind – is an agentive use such as in (1a), most likely because of the salience of the animate entities that are agents. A reasonable hypothesis would be that there is not much difference in meaning and grammatical behavior between agentive and non-agentive uses of variably agentive verbs. Both sentences with *push*, for instance, involve the exertion of a force away from the entity denoted by the subject despite the difference in their subjects' agentivity. Yet, although this prediction holds for of *push* and many other verbs, it does not hold of all verbs, including a set of variably agentive verbs which includes *sweep, bake,* and *teach* that are the focus of this talk. These verbs have an agentive use which is not only taken to be the prototypical use of the verb, but it also is obligatorily agentive, showing a narrowing of the meaning found with other uses of the same verb, which are not obligatorily agentive. In particular, such necessarily agentive uses involve the lexicalization of a routine activity of an agent that represents a specialized instance of the event encoded by the verb's basic meaning.

The distinctive properties of these verbs can be brought out by considering the first sentences that come to mind with the verbs *sweep, bake*, and *teach*: they might look like those in (2), and speakers of English would take them to instantiate prototypical uses of these three verbs.

2. a. Pat swept the floor.
   b. Tracy baked cookies this morning
   c. The substitute taught the class today.

In these sentences, the verb is necessarily agentive. For instance, the subject in (2a) cannot be replaced by a natural phenomenon, as in (3a); further, if a comparable sentence is modified with *accidentally*, as in (3b), the interpretation is that the location swept isn't the intended one, not that the action of sweeping itself is accidental.

3. a. *The wind swept the floor.   (cf. 1b)
   b. Pat accidentally swept under the table.

In this respect, *sweep* patterns like an obligatorily agentive verb such as *assassinate,* as shown in (4), which has to be interpreted as a case of mistaken assassination.

4. The sniper accidentally assassinated the king's bodyguard.

But *sweep* has a broad range of uses that do not show necessary agentivity: it can be found with both inanimate subjects and animate subjects, which may or may not act intentionally, as in (5).

5. a … when the branch of the tree swept the window.
   b. The waves swept the deck.
   c. The storm swept the debris out of the valley.
   d. Pat (accidentally) swept the harp strings with her fingers.
   e. Kelly (accidentally) swept the papers off the desk.
   f. Gina (accidentally) swept her hands against the freshly painted fence.
   g. Ash swept through the streets.

Concomitantly, such uses of *sweep* don't suggest themselves as prototypical instances of the verb. The prototypical, necessarily agentive use shows other semantic restrictions besides obligatory agentivity. It must involve manipulating a broom over a floor-like surface, as shown in (6), contrasting with the other uses, which lack these restrictions: (5d) involves the use of fingers and (5e) has a desk as the surface.

6. a. *Pat swept the kitchen floor with a shovel.
   b. Pat swept the deck/patio/walk/yard.
   c. *Pat swept the desk/the window/the wall/the book.

We claim that goal-oriented human activities have a tendency to get lexicalized, deriving specialized, narrowed senses of otherwise variably agentive verbs, whose basic sense is unspecified for agentivity. Although the specialized sense retains the same semantic core as the basic sense, because of its association with a goal-oriented activity of humans, this sense is taken to be the verb's 'prototypical' sense in that it represents the prototypical activity named by the verb. Thus, from the point of view of 'building verb meaning' the prototypical sense of the verbs in question – *sweep, bake, clean, wash,* and *teach* – is **not** the basic sense.

It is a special property of *sweep* and its kin that what is taken to be their prototypical sense reflects a specialized meaning, which is necessarily agentive. In contrast, the prototypical activity named by many *systematically variably agentive verbs* may involve an agent, but there is no reason to take their prototypical instances to represent a specialized sense, as with the verb *push* in (1). As another example, consider the verb *topple* in (7). The agentive (7a), with a human subject, represents a prototypical instance of toppling, but it is not describing a different type of situation from (7b), with a natural phenomenon subject. Further, agentivity with this verb is always defeasible: (7c), for instance, could felicitously be continued with *they did it by mistake!*

7. a. The kids toppled the Lego tower with glee.
   b. The hurricane toppled the TV tower.
   c.   Our activists were cleared of criminal damage for toppling a statue of slave trader Edward Colston … (*Mirror* (Nexis) 6 January)

Agentive uses of systematically variably agentive verbs then do not bring with them a specialized meaning. The agentivity of animate subjects of these verbs is attributed to a pragmatic inference applying to animates (Van Valin & Wilkins 1996). For *sweep, push,* and *topple* the prototypical uses are agentive (cf. the Idealized Cognitive Model of an event of Croft 1991, DeLancey 1984, Lakoff 1987, Langacker 1987). However, for *sweep* and comparable verbs such as *bake* and *teach* the prototypical and non-prototypical uses differ in crucial lexical properties. This is not so for *push, topple,* and many other verbs.

The *sweep* case study elaborated

We illustrate our proposal that inherently agentive uses of variably agentive verbs involve a specialized meaning with an extended analysis of the English verb *sweep* before turning to some other verbs. We argue that there is a basic sense of *sweep* that underlies all its uses and is unspecified for agentivity; it simply involves an entity moving over a surface while maintaining contact with it. This sense brings together a wide range of situation types with subjects of varied ontological types, as illustrated in (5). The event structure in (8) represents the grammatically relevant elements of meaning of the verb which determine its argument realization options.

8.   basic-*sweep*: "x moves across a surface y and x imparts a force to y via contact".

We show that the argument realization options associated with the basic meaning of *sweep* come from allowing either the movement predicate or the imparting of force predicate in (8) to determine argument realization. When the motion predicate determines argument realization, two related structures are derived by established principles of argument realization: (i) an unaccusative+PP structure, the syntactic structure which expresses motion along a path, as in (5g), and (ii) a causativized version of (i), which yields a transitive+PP structure, as in (5c-f). When the imparting force predicate determines argument realization, established principles of argument realization yield a transitive structure, as in (5a,b).

The prototypical use of *sweep* can be analyzed as involving a specialized sense that retains the semantic core of the basic sense (8) but is derived from it by saturating the variable x, requiring it to be a broom, as in (9).

9. broom-*sweep*: "x$_{broom}$ moves across a surface y and x imparts a force to y via contact".

In this specialized sense, *sweep* then gets interpreted like those denominal verbs taking their names from instruments, such as *funnel, mop,* and *staple*. Such verbs must denote an activity representing the canonical use of the instrument (Kiparsky 1997). We show that this simple adjustment to the event structure (8) has wide-ranging consequences for argument realization and can explain the different argument realization options for the two senses of *sweep* (Levin & Rappaport Hovav 2022). In particular, we explain why the unaccusative+PP and transitive+PP frames are unavailable for the broom-*sweep* sense. Furthermore, because the canonical use of a broom represents a routine goal-oriented activity, only the broom-*sweep* sense allows unspecified object uses (e.g., *Sam swept this morning* must be interpreted as involving a broom), as expected since such uses are licensed when a verb describes a routine goal-oriented activity (Glass 2022). In this respect, *sweep* contrasts with *topple*: although, as mentioned, prototypical instances of *topple* also have an animate agentive subject, they do not describe a routine activity of an agent and, as illustrated in (10), *topple* does not allow unspecified objects.

10. *The toddler **topples** every time he builds a tower.

Instances of all instrument-based denominal verbs are interpreted as canonically performed activities involving the source instrument, as in (11). For instance, (11b) must be understood as involving a use of a funnel that fulfills its design purpose: the sand must be poured into the funnel. It cannot describe an event of pushing sand off a table and into a cup by moving a funnel in a 'sweeping' motion across the table.

11. a. I **mopped** the floor
     b. I **funneled** the sand into the cup.

The verbs *mop* and *funnel* provide evidence that the unspecified object frame is only available if an agentive activity is routinized: that is, it is always done in a specific way (Brisson 1994; Glass 2022; Mittwoch 2005). Mopping is such an activity, and the related verb has an unspecified object use; funneling is not such an activity, and the related verb lacks an unspecified object use.

12. a. I **mopped** all morning.
     b. ?I **funneled** all morning.

Moving beyond *sweep*: Other routine goal-oriented activities of agents are lexicalized

Sweep's specialized meaning derives from the lexicalization of 'broom'. But specialized meanings can arise independent of the lexicalization of an instrument. Many activities of agents tend to be performed in specific ways to fulfill particular goals, so that they have a tendency to become routinized; subsequently, special, narrowed interpretations of the relevant verb become licensed. To illustrate this, we present two further case

studies of non-denominal verbs that show that *sweep* represents a larger phenomenon: other verbs that can describe routinely performed activities may lexicalize a specialized sense. We discuss *bake* (Atkins, Kegl & Levin 1988) and *teach*, although we could make comparable arguments using the verbs *clean* (Levin & Rappaport Hovav 2014) and *wash* (in the grooming sense).

The meaning components common across instances of *bake* are a change of state that comes about through the application of heat. This meaning is found in unaccusative uses, as in (13a,b), and in transitive uses with both agentive and non-agentive subjects, as in (13c-e).

13. a. The potatoes **are baking** in the oven.
    b. The bricks **are baking** in the sun
    c. The sun **is baking** the creek bed.
    d. The potter **is baking** a dozen vases in the kiln.
    e. The chef **baked** some apples for brunch.

But *bake* has a narrower use to describe the agentive activity of making baked goods as in *Tracy baked cookies this morning*. This is what English speakers would consider the prototypical use of the verb. It is this narrower meaning that is associated with unspecified object uses of the verb. *Tracy baked this morning* can only be used if what is being baked is baked goods such as bread, cakes, or cookies; it cannot be used to describe baking vegetables or chicken; nor can it describe baking vases or other ceramics in a kiln even with a potter as the subject of the verb.

Turning next to the verb *teach*, teaching can take many forms: a person can teach a child to ride a bicycle or swim, a dog to beg, a new employee how to do their job, or an apprentice how to fix light fixtures. Furthermore, the subject of *teach* need not be agentive; the verb takes a range of subjects, as in (14).

14. a. This video **taught** me how to fix the light fixture.
    b. The sudden storm **taught** me to always close the windows before I go out.

But the prototypical event described by *teach* is classroom teaching, which we take to be a lexicalized sense reflecting a routine goal-oriented activity. In this sense, the verb has the hallmarks of such verb senses. The verb is obligatorily agentive in this sense, as shown by the interpretation of *Kim accidentally taught the class how to solve the first homework problem*, where what is accidental is what is taught and not the activity of teaching itself. It is also found with unspecified objects; for instance, *Kim taught this afternoon* must refer to classroom teaching and not, say, to Kim teaching her dog a new trick.

Animacy is the key to the lexicalization of specialized meaning: The *drown* case study

Abstracting away from the discussion of these three verbs, we propose that there is a regular process of lexical specialization of verb meaning that involves routine activities of agents. This specialization gives rise to the unspecified object frame with the relevant verbs. Such uses are generally taken to be prototypical instances of the action denoted by the verb. We propose that the prototypicality of certain agentive uses of verbs and the tendency for such uses to get lexicalized follows because they involve routine activities of animates. Evidence that animacy rather than agentivity is the key to such lexical specialization comes from the verb *drown*, which takes a patient argument. As we now show drawing on Rappaport Hovav (2017), with this verb the prototypical use, which manifests lexical specialization, is associated with a non-agentive but animate argument, i.e. the verb's patient.

The first use of *drown* that suggests itself – that is, its prototypical use – is that in (15), which involves an animate entity, the verb's patient, who dies due to immersion in water.

15. The boy *drowned* (?but the paramedics were able to save him before he died).

The parenthetical continuation in (15) shows that death is entailed in this use. However, Rappaport Hovav (2017) shows that generally this verb does not lexically encode the death of the patient, even when the patient is animate, as shown by (16).

16. … your mommy can … soap you [a dog] and **drown** you and dry you …
(http://dogvotional.blogspot.co.il/2010/04/; accessed 1/7/2024)

Nor does drowning have to involve water, as in (17a,b), or involve an animate entity, as in (17a).

17. a. The cake is **drowning** in icing.
    b. They **drowned** Natalia Portman in fabric to hide her pregnancy.

Rappaport Hovav takes these examples to reflect the basic meaning of *drown* and proposes that the event structure for this basic meaning is as in (18), which like *sweep*'s event structure involves two components.

18. basic-*drown*: "x **bears a spatial configuration** with respect to y such that y **covers** x"

As with basic-*sweep*, argument realization principles apply to either one of the bolded components of meaning, giving rise to either transitive or unaccusative/causative instances of *drown*, as in (16) and (17), respectively. We propose that the instances that have an entailment of death due to immersion in water as in (15) represent a lexicalized meaning that fixes the value of y in (18) to water, restricts x to animate entities, and entails x's death, as in (19).

19. specialized-*drown*: "$x_{animate}$ **bears a spatial configuration with respect to** y_{water} such that y **covers** x bringing about x's death"

This specialized meaning, which involves an animate entity, is again taken to be the prototypical meaning; however, unlike with *sweep, bake,* and *teach,* in this instance the specialized meaning involves a patient. Hence, this example shows that animacy is the key to what is taken to be the prototypical use of a verb.

Conclusion

In summary, we have shown that verbs whose prototypical use involves an agent typically do not lexically require an agent. However, variably agentive verbs sometimes develop a specialized agentive sense derived from a basic sense which is unspecified for agentivity via the lexicalization of a goal-oriented activity of an animate entity. If this activity is routinized, the verb may be found in the unspecified object construction in this sense. Given the nature of the activity and the salience of animate entities, this specialized sense then represents the prototypical use of the verb. However, the development of specialized senses involving prototypical uses is more fundamentally associated with animate entities, agents being one instance, although the more common one.

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