Agentivity, animacy, prototypicality, and specialized meaning

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Necessary agentivity and prototypicality

- What is the first sentence that suggests itself for these verbs?
  - *Sweep*:   I just **swept** the kitchen floor.
  - *Bake*:   I **baked** cookies this morning.
  - *Teach*:   I **taught** my class today.

- These sentences describe prototypical uses of the verbs

- These uses are <u>necessarily</u> fully agentive:

  *The wind **swept** the floor.

  I accidentally **swept** under the table.

Interpretation: The location swept isn't the intended one, but the sweeping itself is not accidental

   (cf. The sniper accidentally **assassinated** the king's bodyguard.)

Variable agentivity and non-prototypicality

- Other uses of these verbs do not show necessary full agentivity
- Take the verb *sweep*:
  - Inanimate subjects:

    … when the branch of the tree **swept** the window …
    The waves **swept** the deck.
    The storm **swept** the debris out of the valley.

  - Animate (non-intentional) subjects:

    Pat (accidentally) **swept** the harp strings with her fingers.
    Kelly (accidentally) **swept** the papers off the desk.
    Gina (accidentally) **swept** her hands against the freshly painted fence.
    (sweeping action itself can be accidental)

Variable agentivity and non-prototypicality

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        Kelly (accidentally) **swept** the papers off the desk.

        Gina (accidentally) **swept** her hands against the freshly painted fence.

> Concomitantly, these sentences do not suggest themselves as examples of uses of the verb; they are ***non-prototypical***

Necessary agentivity is accompanied by further constraints

- Necessarily agentive use must involve use of a broom
  *I **swept** the floor with a shovel.

- Necessarily agentive use must involve a floor-like surface
  I **swept** the deck/patio/walk/yard.
  *I **swept** the desk/the window/the refrigerator/the wall/the book.

- These constraints do not hold of the variably agentive uses
  Pat **swept** the harp strings with her fingers.
  Kelly **swept** the papers off the desk.
  The branch of the tree **swept** the window.

Necessary agentivity and specialized meaning

Our claims:

- Necessary agentivity is often associated with further semantic constraints

- The non-prototypical uses of the relevant verbs involve the basic sense of the verb, which is unspecified for agentivity

    sweep, bake, teach, clean, wash ...

- The prototypical uses involve a specialized sense: it retains the semantic core of the basic sense, but narrows it, lexicalizing a goal-oriented human activity

Behind the prototypical uses …

- More generally, goal-oriented human activities tend to get lexicalized as specialized senses of otherwise variably agentive verbs

- Such specialized senses are understood as the prototypical uses of the relevant verbs

- From the point of view of 'building verb meaning' the ***prototypical*** sense is NOT the ***basic*** sense

- We argue that the specialized senses and their prototypicality have their source in activities associated with animates

Systematically variably agentive verbs

- Unlike *sweep,* many other verbs are *systematically* variably agentive
  - Their full agentivity is <u>always</u> defeasible

    Our activists were cleared of criminal damage for **toppling** a statue of slave trader Edward Colston … *Mirror (Nexis) 6 January* (they did it by accident!).

  - As expected, these agentive uses aren't associated with a specialized meaning

    Pat **pushed** the stroller.

    The current **pushed** the boat.

- The agentivity of systematically variably agentive verbs is attributed to a pragmatic inference applying to animates (Van Valin & Wilkins 1996)

Variably agentive verbs

- 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**, the prototypical uses differ in crucial lexical properties from the non-prototypical uses

- This is not so for *topple, push,* and many other verbs

*and *bake, clean, wash, teach* …

Roadmap

- Case study of *sweep*

- *Sweep* is not an outlier:
    - Case study of *bake*
    - Case study of *teach*

- Case study of *drown*: animacy matters to prototypicality!

- Conclusion

(Necessarily agentive) broom-*sweep*: Semantics

- Subject: necessarily understood as an agent (no variable agentivity)
  - Must engage in the action pattern typical of a specific goal-oriented activity
- Non-defeasible inferences:
  - Use of a broom

  Everyone who has ever **swept** the floor (with a standard broom/*shovel)...
  - Used on a floor-like surface

  I **swept** the deck/patio/walk vs. *the desk/*the wall.

  - The action pattern is that typically used to achieve the goal of removing unwanted material from the surface using a broom(-like) entity

  My son **swept** the sidewalk. #He pushed the litter into the gutter with the top of the broomstick.

(Necessarily agentive) broom-*sweep*: Semantics

- Defeasible inferences:
  - Presence of unwanted stuff on surface

  My daughter **swept** the floor although she didn't have to because it was spotless!

  - Attainment of the goal: cleanliness

  After I **swept** the floor, there were still crumbs under the table.

(Variably agentive) basic-*sweep*: Semantics

- Many restrictions on broom-*sweep* do not hold of basic-*sweep*:
  - Variable agentivity

  … when the branch of the tree **swept** the window …

  - No specific action pattern typical of a particular goal-oriented activity
  - No necessary use of a broom even with an agentive subject

  The harpist **swept** the strings of her instrument with a bow …

  She **swept** her hand through her hair …

(Variably agentive) basic-*sweep*: Semantics

- Many restrictions on broom-*sweep* do not hold of basic-*sweep*:
  - No restriction on type of surface

    I can still see the woman now, … dreaming as her fingers **swept** the strings.
    Dana **swept** the coins off the counter.

  - No invited inference of unwanted stuff on surface

    The harpist **swept** the strings of her instrument with a bow …

  - No invited inference concerning attainment of cleanliness

- However, all instances of both broom- and basic-*sweep* involve an entity moving across a surface while maintaining contact

Basic-*sweep* and broom-*sweep* are distinct

Argument realization: Broom-*sweep*

- Simple transitive (+ optional *with* phrase):
    I **swept** the floor (with a stiff broom).

- Unspecified object intransitives:
    We scrub, **sweep,** mop, and polish, until the shop is … gleaming.

- No unaccusative use:
    *The floor **swept**.

Basic-*sweep* and broom-*sweep* are distinct

Argument realization: Basic-*sweep*

- Simple transitive:

    A torrent of rain **swept** the patio.

- Simple transitive with agent subject (+ *with* phrase obligatory)

    Pat **swept** the harp strings *(with her fingers).

- Unaccusative+PP

    Ash **swept** *(through the streets).

- Transitive+PP

    The strong winds **swept** *(the ash) *(through the streets).

Basic-*sweep* and broom-*sweep* are distinct

Argument realization: Basic-*sweep* (cont.)

- No unspecified object counterpart in any frame (even with agentive subject):

    *A torrent of rain **swept**.

    Pat **swept** *(her fingers) *(across the harp strings).

Both *sweep*s: Argument realization summary

Two core syntactic frames:

I. a. Unaccusative   (only basic-*sweep*)

$[_{VP}$ *sweep* $[_{PP}$ x $[_{PP}$ P y $]]]$

… $[$ fire$_x$ $[_{VP}$ swept $[_{PP}$ t$_x$ through the top growth$_y$ $]]]$

   b. Causativized unaccusative   (only basic-*sweep*)

$[_{vP}$ z $[_{VP}$ *sweep* $[_{PP}$ x $[_{PP}$ P y $]]]]$

… $[_{vP}$ the wind$_z$ $[_{VP}$ swept $[_{PP}$ the fires$_x$ $[_{PP}$ through the top growth$_y$ $]]]]$ …

II.   Simple Transitive   (basic- and broom-*sweep*)

$[_{vP}$ z $[_{VP}$ *sweep* $[$ y $]]$ necessary agentivity for broom-*sweep*

Basic-*sweep* and broom-*sweep* are distinct

- Evidence from an identity test for polysemy:

  *The sailor **swept** the deck and so did the rain.
  *The sailor and the rain **swept** the deck.
  *The sailor **swept** the deck and then the rain **swept** it.

- Contrast a variably agentive verb which has a single sense, unspecified for agentivity:

  First the wind **toppled** the sculpture, and after it was righted, the vandals did.

Basic-*sweep* vs. broom-*sweep*: Interim summary

- Basic-*sweep* and broom-*sweep* have distinct interpretive properties and distinct argument realization properties

- Nonetheless, they share a semantic core:

  All examples involve an entity moving across a surface while maintaining contact with it

Sweep: Grammatically relevant meaning components

The grammatically relevant meaning components *sweep* encodes are:

motion across surface and **imparting force via contact**

Basic-*sweep* involves this and nothing more (besides what is idiosyncratic to *sweep* as opposed to *scrape, rub, ...*)

Sweep: Grammatically relevant meaning components

For argument realization purposes, *sweep* has two analyses:

• As a motion predicate:

"**x moves across a surface y** and x imparts a force to y via contact" →

       Unaccusative+PP, Transitive+PP frames

• As a force-via-(sustained) contact predicate

"x moves across a surface y and **x imparts a force to y via contact**" →

       Simple transitive frame

Basic-*sweep* as a motion predicate

- Translational motion realized as a VP-internal small clause

$[_{VP}$ *sweep* $[_{PP}$ x $[_{PP}$ P y $]]]$

… [fire$_x$ $[_{VP}$ swept $[_{PP}$ t$_x$ through the top growth$_y$ $]]]$

- Causativized structure; added external argument may be agentive or not

$[_{vP}$ z $[_{VP}$ *sweep* $[_{PP}$ x $[_{PP}$ P y $]]]]$

… $[_{vP}$ the wind$_z$ $[_{VP}$ swept $[_{PP}$ the fires$_x$ $[_{PP}$ through the top growth$_y$ $]]]]$ …

- These argument realization generalizations are valid across the English verb lexicon, not tailored to *sweep*

Basic-*sweep* as a motion predicate

[_{vP} z [_{VP} *sweep* [_{PP} x [_{PP} P y]]]]

- With an agentive subject, the moving entity x can be:

  Displaced entity: Dana **swept** the coins off the counter.

  Body part: Pat **swept** her fingers across the harp strings.

  Instrument: Kim **swept** her brush through her hair.

- Each qualifies as an entity moving in a sweeping manner

- With non-agentive subject, x must be a displaced entity, since only agents have body parts or wield instruments

  The waves swept the debris onto the shore.

Basic-*sweep* as a motion predicate

- Such sentences are variably agentive

- Full agentivity is not necessary even with an animate subject

  Dana (accidentally) **swept** the coins off the counter.

  Pat (accidentally) **swept** her fingers across the harp strings.

  Kim (accidentally) **swept** her brush through her hair.

- Such sentences are typically understood agentively via a pragmatic inference

Basic-*sweep* as a force-via-contact predicate

- Force-via-contact predicates take two arguments:
  - Force bearer: the moving entity for basic-*sweep*
  - Force recipient: the surface for basic-*sweep*
- Force-via-contact predicates are realized as transitive verbs
  - Force recipient, i.e. the surface, is the object
- Force bearer when conceived as an autonomous entity is the subject
  - Natural phenomena: e.g., fire, wind

    The north wind **swept** the open tundra.
  - 'Projectile*s*': moving entities that impart their kinetic energy to another entity

    A hurricane of projectiles **swept** the ship.

Basic-*sweep* as a force-via-contact predicate

- Some force bearers are under the control of an agent
  - e.g., instruments or body parts
- Such force bearers are not autonomous and cannot be realized as subjects
- Instead, the agent is realized as the subject
- Again, the surface, as a force recipient, is realized as the object
  The harpist **swept** the strings of her instrument with her slim fingers.

Deriving broom-*sweep* from basic-*sweep*

- Broom-*sweep* sets the value of the moving entity x to 'broom'

"x_{broom} moves across surface y and x_{broom} imparts a force to y via contact with y"

Broom-*sweep*: Interpretation

- Saturating x makes broom-*sweep* like denominal verbs based on instruments:

   comb, funnel, hoe, mop, plow, rake, saw, shovel, staple, towel, whip, …

- Such denominals describe actions that involve the canonical use of the artifact
(Kiparsky 1997: 482)

- Implications for broom-*sweep*:
  - Action pattern must be that of a canonical use of a broom
  - Surface is interpreted as a floor-like entity because a broom is designed to remove unwanted material from such a surface

- These inferences are not defeasible; similar non-defeasible inferences hold for other denominal verbs

Broom-*sweep*: Interpretation

- Broom-*sweep* strongly implicates the existence of unwanted material on the surface and its successful removal

- These inferences arise due to the conceptual content of the lexicalized element:
  - A broom is an instrument designed to remove unwanted material
  - Instances of broom-*sweep* must involve the goal-oriented activity a broom is designed for

- But why are these inferences defeasible?

My son **swept** the floor although it was absolutely spotless!

After my daughter **swept** the floor, it was as dirty as it was before!

Broom-*sweep*: Argument realization

Broom-*sweep* is only realized in the simple transitive structure

- The instrument, being lexicalized, can't be expressed as an argument
- No 'subject' available for the SC expressing motion over path

$$[_{VP}\ z\ [_{VP}\ sweep\ [_{PP}\ \textbf{x}\ [_{PP}\ P\ y\ ]]]]$$

| agent | broom | surface |

- x is not a free variable; it cannot be interpreted as a moving entity distinct from the broom

Broom-*sweep*: Canonicity and routinization

- All instrument-based denominal verbs are interpreted as canonically performed activities involving the source instrument

I **mopped** the floor.

I **funneled** the sand into the cup.

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.

- Unspecified object frame only available if the activity is conceptualizable as a routine (Brisson 1994; Glass 2022; Mittwoch 2005)

I **mopped** all morning.

?I **funneled** all morning.

Sweeping generalizations

- Variably agentive (basic-) and necessarily agentive (broom-)*sweep* share a semantic core consisting of idiosyncratic and grammatically relevant meaning components

- Broom-*sweep* is derived from basic-*sweep* by saturation of an argument in the core meaning with 'broom'

- The syntactic and interpretive properties follow: broom-*sweep* is **not** variably agentive

- Like other instrument-based denominals, it requires canonicity

- It also describes a routinized agentive activity and thus allows the unspecified object frame

Broadening the scope

- *Sweep*'s specialized meaning – broom-*sweep* – derives from lexicalization of the instrument 'broom'
- But specialized meanings can arise independent of such lexicalization
- In general, activities of agents may become routinized and subsequently special, narrowed interpretations of the relevant verb are licensed
- Such routinized interpretations also license the unspecified object frame
- **Evidence**: Further case studies of non-denominal verbs
  - *Bake*
  - *Teach*

Bake case study

- Diverse kinds of events can be described with the verb *bake*:

The potter **is baking** a dozen vases in the kiln.
The sun **is baking** the creek bed.
The potatoes **baked** in the oven.
The bricks **are baking** in the sun.   (Atkins et al. 1988)

- This meaning is found with both agentive and non-agentive subjects, and as a transitive and an unaccusative
- All uses involve a change of state via application of heat
- Animate subjects do not demand full agentivity
  Avery accidentally **baked** the potatoes when he left them in the oven.

Bake case study

- Prototypical event described by this verb: making baked goods
  - This use shows properties of creation events (Atkins et al. 1988)
  - Benefactive double object construction

    Avery **baked** Cameron a pie. (= Avery **baked** a pie for Cameron)
- This use involves a specialized sense naming a routine goal-oriented activity
- It has the relevant hallmarks:
  - It is obligatorily fully agentive

  *Avery inadvertently **baked** some cookies this morning.
  - It is found in the unspecified object construction

  Avery **baked** this morning.

    (ok if baked goods, but not potatoes, apples, vases)

Teach case study

- Teaching can take many forms:
  - Teaching a child to swim or ride a bike
  - Teaching a dog to beg
  - Teaching a new employee their job
  - Teaching an apprentice how to fix light fixtures
- *Teach* allows non-agentive subjects:

  This video taught me how to fix the light fixture.

  The sudden storm taught me to always close the windows at night.

Teach case study

- Prototypical event described by this verb: classroom teaching
- This use involves a specialized sense naming a routine goal-oriented activity.
- It has the relevant hallmarks:
  - It is obligatorily fully agentive:

    Kim accidentally **taught** the class how to solve the homework problem.

    (what is taught is accidental, not the act of teaching itself)
  - It is found in the unspecified object construction:

    Kim **taught** this afternoon.

    (can't refer to teaching a dog to beg)

Abstracting away

- The case studies show there is a regular process of lexical specialization of verb meaning that involves routine goal-oriented activities of agents

- This process sometimes involves the lexicalization of an instrument, but not necessarily

- As the specialized meaning of the verb involves a routinized activity, the unspecified object frame is licensed

- The specialized sense is generally taken to underlie the prototypical uses of the verb

Abstracting away

- <u>Our proposal:</u> The tendency for agentive uses of verbs to be lexicalized and to be understood as the prototypical instances of the verb follows because they because they describe event types that are central in human experience

- Animacy, then, rather than agentivity, is at the core of prototypicality

- Evidence that animacy is the key comes from the verb *drown*, where lexical specialization and prototypicality are associated with a non-agentive argument, i.e. the verb's patient

Non-agent animate-based prototypicality

- What is the first use that suggests itself for *drown*?

The boy **drowned** (?but the paramedics saved him before he died).

- This prototypical use involves an animate entity being submerged in and dying in water

Non-agent animate-based prototypicality

- However, drowning need not be in water nor lead to death, even with an animate patient (Rappaport Hovav 2017)

The cake **is drowning** in icing.

They **drowned** Natalia Portman in fabric to hide her pregnancy.

… your mommy can … soap you [a dog] and **drown** you and dry you …

The window **drowns** the room in sunlight.

Non-agent animate-based prototypicality

- The basic meaning of *drown* is

  "x **bears a spatial configuration** with respect to y such that y **covers** x"

- This meaning does not involve water, a necessarily animate patient (x), or death

- As with basic-*sweep*, argument realization principles may apply with respect to either one of the bolded components of meaning, giving rise to either transitive or unaccusative/causative instances of *drown*

Non-agent animate-based prototypicality

- Instances of *drown* with the entailment of death due to immersion in water represent a narrowed, lexicalized meaning:

    "$x_{animate}$ **bears a spatial configuration with respect to** y_{water}

    such that y **covers** x bringing about x's death"

- This meaning fixes the value of y to water; restricts x to animate entities, and entails x's death

- Due to y's fixed value, the verb is found in an unaccusative frame with x as a patient subject

- Unlike *sweep*, *bake*, and *teach*, *drown* involves an animate patient and not an agent

Summary and conclusion

- Verbs whose prototypical use involves an agent typically do not lexically require an agent

- Variably agentive verbs may develop a specialized agentive sense via the lexicalization of a goal-oriented activity

- Due to the involvement of an animate, this sense is taken as the prototypical sense of the verb

- Such specialized senses are fundamentally associated with animate entities, with agents being the most common choice

Thank you!

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