

# A Root-sensitive Approach to Event Structure\*

**Josep Ausensi**  
Universitat Pompeu Fabra  
josep.ausensi@upf.edu

**Ryan Walter Smith**  
University of Texas at El Paso  
rwsmith4@utep.edu

**Jianrong Yu**  
National University of Singapore  
jianrong@nus.edu.sg

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## 1 Introduction

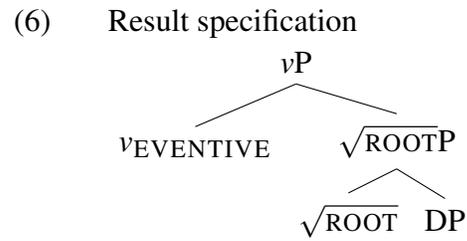
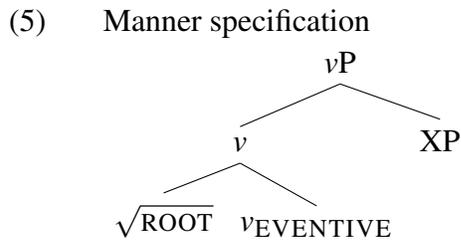
- Syntactic, event-structural theories of verb meanings typically hold that verbs decompose into **event templates**, which define the temporal and causal structure of the event, and **roots**, which provide real-world details about the event (Rappaport Hovav and Levin, 1998, 2010; Harley, 2003, 2005; Borer, 2003, 2005; Ramchand, 2008; Acedo-Matellán and Mateu, 2014; Beavers and Koontz-Garboden, 2020, a.m.o).
- Major concerns for such theories include **the distribution of idiosyncratic roots and what sorts of event structures particular roots can be inserted into**.
- One influential approach been proposed in the literature holds that roots fall into clear ontological classes that determine where they can be inserted (most notably Rappaport Hovav and Levin, 1998, 2010; Embick, 2009). In particular, Rappaport Hovav and Levin (2010) argue for a distinction between **manner and result verbs**, with each class containing complementary semantic entailments and each compatible only with particular event structure templates, leading to a MANNER-RESULT COMPLEMENTARITY.
- In this paper, we demonstrate with naturally-occurring data in English that this approach does not accurately predict the range of event structures that verb roots can appear in. Most notably, we observe that some verbs roots classified as result verbs (in Rappaport Hovav and Levin’s sense) enjoy a certain level of elasticity, contradicting what we would expect under these approaches.
- We propose, differing from Beavers and Koontz-Garboden (2020), that certain classes of result verbs are semantically **predicates of events**. This analysis makes accurate predictions about the **interactions of these verbs with modifiers like the presupposition trigger *again* and durative *for*-PPs, as well as the range of interpretations available when integrated into a resultative event structure template**.

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## 2 Constraining Root Distribution

- To account for how verb roots seem to be selective in the kinds of event templates they appear in, [Rappaport Hovav and Levin \(2010\)](#) propose what they call a MANNER-RESULT COMPLEMENTARITY.
  - (1) MANNER-RESULT COMPLEMENTARITY: Manner and result meaning components are in complementary distribution: a verb lexicalizes only one.
- The intuition is that **manner verbs encode the manner in which some action is carried out**, a kind of non-scalar change, while **result verbs encode the state of holding a scalar property**.
- Hence, the result verb *clean* encodes a state of being clean that can come about in any number of ways (wiping, sweeping etc.) while a manner verb like *run* can lead to any number of possible result states (being tired, in a particular location etc.). A representative sample of each class is provided below by [Beavers and Koontz-Garboden \(2012\)](#).
  - (2)
    - a. Manner verbs: *blink, jog, run, scrub, sweep, swim, walk, wipe, yell, hammer*
    - b. Result verbs: *break, clean, crush, destroy, dim, shatter, burn, freeze*
- These verbs are **inserted into a variety of event structure templates**, which define the temporal, aspectual, and causal nature of the overall event while the **lexical semantic verb root provides idiosyncratic information about the real-world events they denote** ([Rappaport Hovav and Levin, 1998, 2010](#)).
- [Rappaport Hovav and Levin \(2010\)](#) propose that **manner verb roots are associated with an event structure template as the modifier of an ACT operator**, while **result verb roots serve as complements of a BECOME operator** (see also [Dowty 1979](#)). In this way, **verb root distribution is tightly constrained by their ontological status as manner or result roots**.
  - (3)
    - a. John wiped.
    - b. [John ACT <*WIPE*>]
  - (4)
    - a. The vase broke.
    - b. [The vase BECOME <*BREAK*>]
- In syntactified event templates (e.g. [Embick, 2004](#)), **manner denoting roots are merged as modifiers of functional verbalizing heads encoding eventive semantics** like (direct) causation, while **result denoting roots are merged as complements of eventive verbalizing heads and define the result state arising from these events** ([Marantz, 1997](#); [Embick, 2004](#); [Folli and Harley, 2005](#); [Embick, 2009](#); [Harley, 2005, 2012](#); [Alexiadou et al., 2015](#), a.m.o).



(Harley, 2012)

- As [Beavers and Koontz-Garboden \(2012, 2020\)](#) note, MANNER-RESULT COMPLEMENTARITY is a two-fold claim:
  - First, **lexical semantic verb roots cannot have both manner and result entailments**, which amounts to a claim about semantics, i.e., the truth-conditional content of verb roots.
  - Second, MANNER-RESULT COMPLEMENTARITY regulates **where lexical semantic verb roots can be inserted in an event structure template**. Translated into a syntactic approach to event structure, this amounts to a claim about their syntax, where particular classes of roots can be integrated into the syntactic structure in tightly constrained ways.

### 3 Classes of Result Roots

- As predicted by [Rappaport Hovav and Levin \(2010\)](#), there is indeed a difference between manner and result verbs in terms of how they can be integrated into particular sorts of event structures.
- Most notably, **result verbs should be impossible in constructions where it has to merge as a manner modifier**. Such constructions include **resultatives predicated of unselected objects (7)**, **those that introduce a distinct result state from the verb (8)**, and **spatial resultatives (9)**. We illustrate with the canonical manner verbs *scrub*, *hammer*, *dance*, and *run*, in contrast with result verbs like *break*, *freeze*, and *burn*.
- It is important to note that it is in principle conceptually possible to imagine events described by the (b) examples and (9). Nonetheless, [Rappaport Hovav and Levin \(2010\)](#) claim that it is impossible to express such conceptual events using these structures, leading them to conclude that this is an actual grammatical constraint (see also [Grimshaw, 2005](#)).

(7) Unselected objects

- Kim **scrubbed** her fingers raw. [Kim ACT<sub><SCRUB></sub> [CAUSE [her fingers BECOME <RAW>]]]
- \*The toddler **broke** his hands bloody.

[The toddler ACT<sub><BREAK></sub> [CAUSE [his hands BECOME <BLOODY>]]]

([Rappaport Hovav and Levin, 2010](#))

(8) Distinct result states

- a. John **hammered** the metal flat. [John ACT<SCRUB> [CAUSE [the metal BECOME <FLAT>]]]  
b. \*John **broke** the vase valueless.  
[John ACT<BREAK> [CAUSE [the vase BECOME <VALUELESS>]]]

(9) Spatial resultatives

- a. John **danced** out of the room. [John ACT<DANCE> [ BECOME <OUT OF X>]]  
b. Usain Bolt **ran** into the hotel. [Usain Bolt ACT<RUN> [ BECOME <OUT OF X>]]  
c. \*The water **froze** out of the bottle. [The water ACT<FREEZE> [ BECOME <OUT OF X>]]  
d. \*The rocket **burned** into the hotel. [The rocket ACT<BURN> [ BECOME [ TO [<IN HOTEL>]]]]  
(c) and (d) from Jackendoff, 1990

- Nevertheless, certain verbs classified as result roots by Rappaport Hovav and Levin (2010) **do in fact appear as manner modifiers in resultative structures described above.**
- In the naturally occurring examples below, a separate XP describes the result, while the apparent result verbs are merged as manner modifiers specifying how the result state was brought about.

(10) Adjectival resultatives

- a. With a few slices of her claws, she **tore** him free. (Google Books)  
b. A couple of monks **broke** the corpse loose from the deck. (COCA)  
c. Sailor finishes his beer [...] steps on it, **crushing** it flat. (COCA)  
d. Huebner picked a nit from behind his ear and **squished** it dead. (COCA)

(11) Spatial/path resultatives

- a. Scientists just **melted** a hole through 3,500 feet of ice. (Google)  
b. Now we **drain** the blood out of the heart. (COCA)  
c. He told her a plane had just **smashed** into the North Tower. (GloWbE)  
d. A lot of the water sprayed onto the ship had **frozen** onto the steel. (GloWbE)  
e. Millions of bottles that are [...] and then **burned** into the atmosphere. (GloWbE)

- Therefore, we hold that examples like (7)-(9), if the judgments are indeed widely shared, are not grammatically ruled out, since these exact same verbs do occur in the structures in (10) and (11).
- What then might be the differences between these two classes of examples? For example, why is *broke the vase valueless* much less acceptable while *broke the corpse loose from the deck* attested? Similarly, with spatial/path PPs, what seemingly rules out *froze out of the bottle* while *frozen onto the steel* is attested?
- An intuitive and informal explanation is that **these unexpected result APs and PPs either further specify the result state entailed by the result verb, or provide some entity denoted by a DP within the result state that comes to hold the state denoted by the result verb merged in manner modifier position.**

- Hence, *flat* in *crush it flat* provides a possible and more specific description of the state of being crushed, whereas *bloody* in *broke his hands bloody* is not necessarily an imaginable state that can be associated with a state of being broken.
- Likewise, *froze out of the bottle* seems to be intuitively describing the bottle coming to be broken due to expansion of the water when it froze into ice, which requires a completely different state description than *freeze*. In contrast, *melted a hole through 3500 feet of ice* describes the ice becoming melted, even if *a hole* is not necessarily interpreted as the theme of the verb *melt* but as a created object.
- Ideally, we want an analysis whereby these attested cases can be accommodated, since the naturally occurring data show that previous presented data in [Rappaport Hovav and Levin \(2010\)](#) and [Jackendoff \(1990\)](#) are not necessarily general and hence argue against MANNER-RESULT COMPLEMENTARITY.
- In what follows, we attempt to meet this challenge and provide a formal compositional semantic account of how a sub-class of result verbs can come to be merged in manner modifier positions.

## 4 Analysis

- We follow [Embick \(2009\)](#), [Levinson \(2014\)](#), and [Beavers and Koontz-Garboden \(2020\)](#) in assuming that **roots can fall into ontological classes differentiated by their semantics and semantic types, which feed into how they compose within particular event structural templates.**
- In particular, we propose along with [Beavers and Koontz-Garboden \(2020\)](#) that the class of result verbs can actually be divided into two different classes, what they call **result roots** and **property concept roots**.
- Property concept roots form verbs like *open*, *close*, *straighten*, *cool*, *warm* etc. The defining semantic property of these roots is that they **do not entail change within their lexical semantics, and semantically translate into states predicated of individuals**. An example of such a property concept root is provided below.

$$(12) \quad \llbracket \sqrt{\text{COOL}} \rrbracket: \lambda x. \lambda s. \text{COOL}(x, s)$$

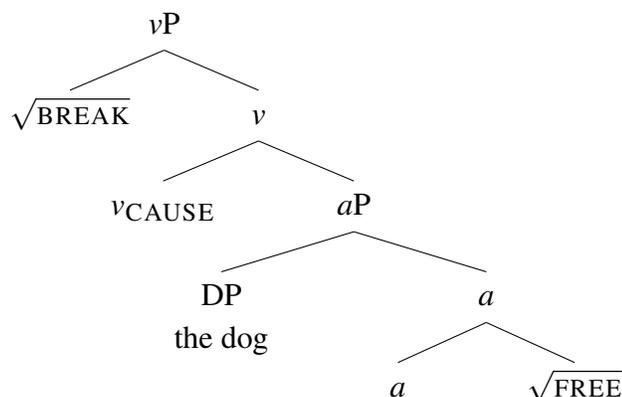
- In contrast, result roots denote resulting states; that is, the lexical semantics of such roots **entail an event of change that leads to the result state denoted by the root**.
- [Beavers and Koontz-Garboden \(2020\)](#) present a range of semantic arguments, including sub-lexical modification with *again* and *re*-prefixation, to justify proposing distinct semantics for these classes of roots.
- Along with [Embick \(2009\)](#) and differing from [Beavers and Koontz-Garboden \(2020\)](#), we analyze **result roots as simple predicates of events**. The **entailment of change can be encoded into their lexical semantics via meaning postulates requiring that the event of change described by the**

**root also entails transition to a state that the root names**, as shown by the semantics of the root of the verb *break*.

$$(13) \quad \llbracket \sqrt{\text{BREAK}} \rrbracket: \lambda x. \lambda e. \text{BREAK}(x, e) \text{ where } \text{BREAK}(x, e) = 1 \text{ iff } \exists s[\text{CAUSE}(e, s) \wedge \text{BROKEN}(x, s)]$$

- Analyzing the roots of these verbs as underlyingly eventive has the advantage of **maintaining a constrained mapping from semantics to the way in which roots are incorporated into the syntax**. Specifically, **roots that denote predicates of events are always eventive functional head modifiers while roots that denote predicates of states are complements of eventive functional heads** (e.g. [Folli and Harley, 2005](#); [Harley, 2005](#); [Embick, 2009](#)).
- How might the the result root compose with eventive functional heads as well as the other result predicate within a resultative structure? We adopt a variant of what [Harley \(2005\)](#) calls MANNER INCORPORATION, whereby **manner roots combine semantically with a causative event introduced by  $v_{\text{CAUSE}}$  with the semantics of causation provided by [Kratzer \(2005\)](#), via EVENT IDENTIFICATION ([Kratzer, 1996](#)).**

(14) John broke the dog free (of the burning house).



- $\llbracket \sqrt{\text{FREE}} \rrbracket: \lambda x. \lambda s. \text{FREE}(x, s)$
- $\llbracket [aP] \rrbracket: \lambda s. \text{FREE}(\text{the dog}, s)$  (FUNCTION APPLICATION)
- $\llbracket [v_{\text{CAUSE}}] \rrbracket: \lambda P. \lambda e. \exists s[\text{CAUSE}(e, s) \wedge P(s)]$
- $\llbracket [v] \rrbracket: \lambda e. \exists s[\text{CAUSE}(e, s) \wedge \text{FREE}(\text{the dog}, s)]$  (FUNCTION APPLICATION)
- $\llbracket \sqrt{\text{BREAK}} \rrbracket: \lambda x. \lambda e. \text{BREAK}(x, e)$
- $\llbracket [vP] \rrbracket: \lambda x. \lambda e. \exists s[\text{BREAK}(x, e) \wedge \text{CAUSE}(e, s) \wedge \text{FREE}(\text{the dog}, s)]$  (EVENT IDENTIFICATION)

- Notice now that the external argument has yet to be introduced. We follow [Kratzer \(1996\)](#) in assuming that **external arguments are introduced by the functional head VOICE via EVENT IDENTIFICATION**.
- However, the vP contains an unsaturated individual argument and is of semantic type  $\langle e, \langle v, t \rangle \rangle$ . This is the wrong semantic type for EVENT IDENTIFICATION, which combines a function of type  $\langle e, \langle v, t \rangle \rangle$  (here the semantic type of VOICE) and another of type  $\langle v, t \rangle$ .

- As a way of getting around this type mismatch, we may follow [Alexiadou et al. \(2014\)](#) in assuming that **an operation of EXISTENTIAL CLOSURE may apply at the  $\nu$ P level to produce a constituent that is of the right semantic type to serve as input to EVENT IDENTIFICATION.** Putting everything together, we arrive at the following semantic denotation for (14), which carries a meaning postulate of entailing a state of brokenness.

- (15) a.  $\llbracket \nu P \rrbracket: \lambda e. \exists x \exists s [\text{BREAK}(x,e) \wedge \text{CAUSE}(e,s) \wedge \text{FREE}(\textit{the dog},s)]$   
(EXISTENTIAL CLOSURE)
- b.  $\llbracket \text{VOICE} \rrbracket: \lambda y. \lambda e. \text{AGENT}(y,e)$
- c.  $\llbracket \textit{John broke the dog free} \rrbracket: \lambda e. \exists x \exists s [\text{AGENT}(\textit{john},e) \wedge \text{BREAK}(x,e) \wedge \text{CAUSE}(e,s) \wedge \text{FREE}(\textit{the dog},s)]$  where  $\exists s' [\text{CAUSE}(e,s') \wedge \text{BROKEN}(x,s')]$   
(EVENT IDENTIFICATION, FUNCTION APPLICATION)

## 5 Predictions

### 5.1 Sublexical modification

- The proposed lexical semantic denotation of what [Beavers and Koontz-Garboden \(2020\)](#) call result roots that form verbs like *break*, as we proposed in (13), makes several desirable predictions.
- First, as already shown extensively by [Beavers and Koontz-Garboden \(2012, 2020\)](#), the fact that these roots entail change predict that they **should never produce restitutive presuppositions with the sub-lexical presupposition trigger *again*** ([von Stechow, 1996](#); [Beck and Johnson, 2004](#), a.m.o).<sup>1</sup>

- (16) CONTEXT: Mary requested a potter to make a plate in separate pieces so she can practice her pottery-mending skills. She took a day to put the pieces together. John, who was secretly angry with Mary for previously breaking his favorite bowl, snatched the mended plate from Mary and...  
 # John broke the plate again. (Yu, 2020)

- However, we differ from [Beavers and Koontz-Garboden \(2020\)](#) in analyzing result roots as underlyingly eventive predicates. In contrast, they provide essentially stative denotations for these roots, as illustrated below for the root of *break*.

- (17)  $\llbracket \sqrt{\text{BREAK}} \rrbracket: \lambda x. \lambda s. \text{BREAK}(x,s) \wedge \exists e [\text{BECOME}(e,s) \wedge \text{BROKEN}(x,s)]$   
(adapted from [Beavers and Koontz-Garboden](#)'s entry for *crack*)

- One diagnostic to tease these two analyses apart is modification by durative *for*-phrases. By way of comparison, **verbs formed from property concept roots like *open* permit both eventive and sta-**

<sup>1</sup>An anonymous reviewer questions the validity of examples like (16), suggesting that the event provided by the context is not conceivable as a breaking event and hence leading to infelicity. However, this shows precisely that it is impossible to isolate even a prototypical result state available for modification with these verbs, supporting the analysis that these verbs inherently entail eventive change. See [Beavers et al. \(2021\)](#) for discussion and for similar examples with verbs like *shatter*.

**tive modification with durative *for*-phrases**, with the event or the state persisting for the duration specified by the PP.

(18) Mary opened the door for two hours.

- a. Mary spent two hours opening the door.
- b. Mary opened the door and it remained open for two hours.

- An analysis like (17), where there is a variable corresponding to the result state denoted by the root, would **predict that *for*-phrases can specify the duration of an individual holding the state**, much like in (18-b). However, **a durative reading of the result state independent of the event of change is in fact unavailable**, contrary to what we expect.

(19) Mary broke the vase for two hours.

- a. ? Mary spent two hours breaking the vase.
- b. # Mary broke the vase and it remained broken for two hours.

- To the extent that only the eventive reading of the durative PP in (19-a) is available, it would support our analysis of the root of *break* being underlyingly eventive, with no state variable that is available for modification by durative phrases.

## 5.2 Separate result states

- We now turn to our account of how result roots are integrated semantically into a syntactic event structure template.
- First, note that because the root is underlyingly eventive, we straightforwardly predict **it will be an eventive modifier of  $v_{\text{CAUSE}}$** , maintaining the strict syntax-semantics mapping on the distribution of roots (Embick, 2009).
- In particular, **we predict the availability of separate result states with these verb roots appearing in manner modifier position.**
- In contrast, a stative analysis of these verb roots would require spelling out how exactly the result root is incorporated into examples like (10) and (11) (some repeated below) where there is **no obvious available complement of eventive  $v$  position**, assuming the property concept root denoting the second result is indeed in this position.

(20) Adjectival resultatives

- a. With a few slices of her claws, she **tore** him free. (Google Books)
- b. A couple of monks **broke** the corpse loose from the deck. (COCA)

(21) Spatial/path resultatives

- a. Scientist just **melted** a hole through 3,500 feet of ice. (Google)
- b. Now we **drain** the blood out of the heart. (COCA)

- In contrast, recall that **property concept roots such as *cool* are underlyingly stative as they are predicates of states**. We thus **predict that they should always serve as complements of eventive functional heads**.
- This translates into the fact that property concept roots are **predicted not to appear in event structures where they modify the functional  $\nu$  by providing the manner of the event**. This prediction, we note, seems to be borne out.

(22) a. \*The kid **opened** the ball into the garden.

b. \*The sky **darkened** the city hard to see.

c. \*The dentist **whitened** his teeth clean.

(Ausensi, 2021: 235)

d. \*We **cooled** the people out of the room with the air-conditioner on too high.

(Rappaport Hovav, 2008: 23)

e. \*Kim **dimmed** her eyes sore.

(Beavers and Koontz-Garboden, 2012: 340)

f. \*I **thinned** the soup tasteless.

(Rappaport Hovav, 2014: 276)

- Second, note that the semantics we proposed in (15) (repeated below) **contains both the result state denoted by the result root and property concept root, as well as the existentially closed theme and holder argument of the result root**. As noted, this was to allow composition with the external-argument introducing VOICE head via EVENT IDENTIFICATION.

(23)  $\llbracket \text{John broke the dog free} \rrbracket$ :  $\lambda e. \exists x \exists s [\text{AGENT}(\text{john}, e) \wedge \text{BREAK}(x, e) \wedge \text{CAUSE}(e, s) \wedge \text{FREE}(\text{the dog}, s)]$  where  $\exists s' [\text{CAUSE}(e, s') \wedge \text{BROKEN}(x, s')]$

- We propose that this is exactly what accounts for the two restrictions observed when result roots appear in manner modifier position with a second property concept root as in (10) and (11):
  1. The resulting resultative construction is often judged more acceptable if **the two result states are pragmatically compatible and possible outcomes of the causing event**.
  2. There is a PP providing a **second DP that can possibly be interpreted as holding the result state described by the result root**.
- The intuition we wish to pursue is namely that **the two states present in the semantic denotation are specified as being caused by the same event**.
- One might think of this in terms of Gricean relevance implicatures; **if the two resulting states are caused by the same event, speakers might be biased toward interpreting the two resulting states as being connected in some way** or one would not have used a construction that specifies only one causing event.

- This might go some way toward explaining why *break the vase valueless* was deemed unacceptable in previous work, while the highly idiomatic *break the vase into pieces* is widely attested. **Valueless is not necessarily an outcome automatically associated with being broken and requires specific contextual factors** (vases need not be all highly valuable). On the other hand, *into pieces* is a possible, natural, and more specific description of what a state of brokenness might look like.
- Similarly, one might take the presence of an existentially quantified theme argument holding the result state entailed by the result root to be the source of why examples like *melted a hole through 3500 feet of ice* is attested. As noted, **the hole here is unselected in that it is a created object rather than one affected by the event and holding the state denoted by the result root** (the hole did not melt).
- Nonetheless, the semantics of such constructions requires there to be such an object, as indicated by existential quantification over the theme argument of the result root. In *melted a hole through 3500 feet of ice*, it is clear that **the DP 3500 feet of ice within the PP is interpreted as the exact entity that is being melted and comes to be in a melted state**. In contrast, consider a hypothetical minimal pair like the following example.

(24) Scientists melted a hole through 3500 feet of solid rock.

- To our ears, this constitutes a contrastive minimal pair in that it sounds degraded compared to *melted 3500 feet of ice*. Similar logic can go some way toward accounting for this; **rock is less likely to be construed as meltable without highly specific circumstances** (causing event producing extremely high temperatures would need to be specified contextually in some way).
- Consider now another class of examples, namely the attested *burn bottles into the atmosphere* in (11-e). Note here that **the object is now a selected one, where the bottles are affected by the burning event and come to become burnt**, as might be expected if there is an existentially quantified holder argument and if Gricean relevance or quantity implicatures bias speakers to interpret the surface object as the holder of both burnt and in-the-atmosphere states.
- What then might be the source of the contrast with examples of the *The rocket burned into the house* sort judged to be ungrammatical (e.g. Jackendoff, 1990)?
- Here, we might follow the reasoning in Levin and Rappaport Hovav (1995) for similar examples like *crack the egg into the bowl*. The intuition is that **while there is one surface object, the two result states are nonetheless predicated of distinct entities**: the *egg shell* comes to be cracked, while the *contents of the egg* come to be in the bowl. Yet, it is clear that **the egg shell and contents are distinct parts of the same object**.
- If there is an existentially quantified holder argument for the result root with a surface direct object holding the second result state denoted by the PP, Gricean reasoning biases speakers to interpret the surface direct object as holding both states, and if Levin and Rappaport Hovav (1995) are right in that the two result states must be predicated of distinct entities, then we expect that **part-whole**

**relationships become a salient way of interpreting resultative structures formed from result roots in manner modifier position.**

- One way of explaining the attested *burn bottles into the atmosphere* could be that it is salient knowledge that **burning of (plastic) bottles potentially releases toxic gases into the atmosphere**, such that **a part-whole relationship between two distinct entities that are part of the same object** can be construed as holding the result states of the burning event (burnt and in-the-atmosphere).
- With *The rocket burned into the house*, it seems to be common knowledge that **rockets, when fired at houses, explode and likely cause damage to houses rather than becoming distinct parts that can then end up burnt or being located in houses**, providing a possible pragmatic explanation for the contrast with *burned bottles into the atmosphere*.
- Importantly, we maintain that **apparent ungrammatical examples provided in previous literature are pragmatically odd rather than being ruled out grammatically** (e.g. [Borer, 2005](#); [Acedo-Matellán and Mateu, 2014](#)). Hence, if given highly specified contextual backgrounds, various speakers may (dis)agree over many of these resultatives formed from result roots in manner modifier position.
- Worth emphasizing is that **these pragmatic considerations and possible interpretations are *not completely unconstrained* in our proposed analysis**; it is precisely that **the holder argument as well as entailed result state of the result root are specified within the compositional semantics** through existential quantification and in the form of a meaning postulate that guide the pragmatic interpretation.
- In this way, we provide the beginnings of a semantics-pragmatics interface answer to the question of what the restrictions on how examples like (10) and (11) are interpreted might be.

## 6 Conclusion: Manner-Result Complementarity Again

- We began by examining the predictions of MANNER-RESULT COMPLEMENTARITY, providing naturally-occurring English data that counterexemplify these predictions.
- Specifically, we see that a sub-class of what have previously been characterized as result verbs by [Rappaport Hovav and Levin \(2010\)](#) do in fact appear in resultative structures where there is a second result predicate present.
- This implies that these so called **result verbs do appear as modifiers of eventive  $v$  heads**, contrary to what we might expect if MANNER-RESULT COMPLEMENTARITY regulates the integration of these verbs into syntactic event structural templates.
- We provide a semantics for the roots of such verbs, analyzing them as **underlyingly eventive predicates that are incorporated into a syntactic event structure via modifying eventive  $v$  heads** as do previous analyses (e.g. [Folli and Harley, 2005](#); [Harley, 2005](#); [Embick, 2004, 2009](#)).

- The analysis hence straightforwardly **predicts that they can appear in resultative structures** since property concept roots in [Beavers and Koontz-Garboden](#)'s sense, which are underlyingly predicates of states, can then serve as complements to eventive *v* heads modified by these result verbs.
- In particular, we propose that **the way these roots are semantically incorporated into event structure templates provides a possible explanation for the restrictions on how resultative structures containing these result verbs are constrained and interpreted**, a point that many previous works have simply assigned to the pragmatics rather than to the interaction between the compositional semantics with pragmatic reasoning and conceptual knowledge.
- By way of closing, we might again reflect on MANNER-RESULT COMPLEMENTARITY. As with [Beavers and Koontz-Garboden \(2012, 2020\)](#), **we proposed an analysis that denies the semantic aspect of MANNER-RESULT COMPLEMENTARITY**, holding that a lexical semantic root can have both manner and result entailments.
- Manner and result entailments need not necessarily translate into a syntactically decomposed structure through functional heads or small clause result states and **can instead be packaged into a single lexical semantic root**.
- However, we maintain that **the incorporation of lexical semantic roots into event structure templates is deterministic and can be inferred via their semantic types as predicates of events or as predicates of states** (e.g. [Embick, 2009](#)).
- In other words, **we maintain the syntactic aspect of MANNER-RESULT COMPLEMENTARITY**, suggesting that there is a **strict syntax-semantics mapping that constrains the distribution of lexical semantic roots in event structure templates** (see also [Acedo-Matellán and Mateu, 2014](#) and [Ausensi and Bigolin](#), to appear).

## References

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