

John Beavers, Andrew Koontz-Garboden (2012)
Manner and Result
in the Roots of Verbal Meaning

Ciara Sheridan Melanie Tosik James Fitzpatrick

9 April, 2014

Outline

Introduction

Background

Verbs of Killing: A Typology

Result Meanings and Manner-of-Killing Verbs

Manner-Encoding and Manner-of-Killing Verbs

Other Classes of Manner+Result Verbs

Manner, Result, and the Architecture of Event Structure

Complementarity in Event Structures

The Decomposition of Manner+Result Predicates

Manner+Result Roots as “Result” Roots

Manner+Result Roots as “Manner” Roots

Conclusion

Outline

Introduction

Background

Verbs of Killing: A Typology

Result Meanings and Manner-of-Killing Verbs

Manner-Encoding and Manner-of-Killing Verbs

Other Classes of Manner+Result Verbs

Manner, Result, and the Architecture of Event Structure

Complementarity in Event Structures

The Decomposition of Manner+Result Predicates

Manner+Result Roots as “Result” Roots

Manner+Result Roots as “Manner” Roots

Conclusion

Introduction

- Possible and impossible verb meanings as primary concern of lexicalist semantics
 - Event structure as grammatical level of representation of word meanings built upon two main components:
 1. Set of basic eventive predicates indicating causation (CAUSE), action (ACT) and change of state (BECOME)
 2. Set of lexical semantic roots filling in real-world details
 - Components combined into complex event structures via a limited, well-defined event calculus
- Only some event structures (i.e. verb meanings) are possible:
- (1) a. John grimped Mary.
 - b. [[x BECOME ⟨dead⟩] CAUSE [y BECOME ⟨dead⟩]]

Rappaport Hovav&Levin

- Rappaport Hovav&Levin (2010) built a discussion about possible verb meanings upon these properties of event structures.
- They claim that eventive verbs fall into two broad semantic classes ...
 1. **Manner Verbs** such as *blink, run, sweep*; encoding a manner in which some action is carried out
 2. **Result Verbs** such as *break, destroy, dim*; encoding the coming about of some particular result state
- ... and that no single verb encodes both meanings at the same time.

RH&L's Discussion

- This complementarity follows from how event structures are composed.
- A single lexical semantic root can either modify an underlying ACT predicate (as in **a.**), or be an argument of an underlying BECOME (as in **b.**), but not both, ruling out **c.**
 - $[x \text{ ACT}_{\langle \text{ROOT} \rangle}]$
 - $[x \text{ ACT}] \text{ CAUSE } [y \text{ BECOME } \langle \text{ROOT} \rangle]$
 - $*[[x \text{ ACT}_{\langle \text{ROOT} \rangle}] \text{ CAUSE } [y \text{ BECOME } \langle \text{ROOT} \rangle]]$

¹(in a **single** verb)

RH&L's Discussion

- This complementarity follows from how event structures are composed.
- A single lexical semantic root can either modify an underlying ACT predicate (as in **a.**), or be an argument of an underlying BECOME (as in **b.**), but not both, ruling out **c.**
 - a. $[x \text{ ACT}_{\langle \text{ROOT} \rangle}]$
 - b. $[x \text{ ACT}] \text{ CAUSE } [y \text{ BECOME } \langle \text{ROOT} \rangle]$
 - c. $*[[x \text{ ACT}_{\langle \text{ROOT} \rangle}] \text{ CAUSE } [y \text{ BECOME } \langle \text{ROOT} \rangle]]$
 - d. $*[[x \text{ ACT}_{\langle \text{ROOT}_1 \rangle}] \text{ CAUSE } [y \text{ BECOME } \langle \text{ROOT}_2 \rangle]]^1$
- Furthermore, RH&L presuppose that there is only ever one root per lexeme, ruling out **d.** as well.
- This predicts that no event structure will ever have both result and manner roots simultaneously, explaining why no verb seems to encode both meanings simultaneously.

¹(in a **single** verb)

Beavers&Koontz-Garboden

- RH&L: Complementarity of manner/result in a single verb
 - B&K–G: Examination of empirical and theoretical foundations for RH&L’s proposal, arguing that complementarity question has been complicated by the use of diagnostics for manner and result in a verb’s meaning that are ...
 - a. interdependent in ways that make them inappropriate for verifying complementarity.
 - b. not linked to either truth-conditional or event structural semantics.
- B&K–G devise independent truth-conditional diagnostics for identifying manner and result in a verb’s meaning and compare them to standard diagnostics (probing for event structure), **counterexemplifying complementarity of manner/result.**

Beavers&Koontz–Garboden (in sum)

- Aim to contradict RH&L's notion of two semantic classes of verbs (manner or result) and propose a third set of small verbs that behave differently (manner+result).
- They argue against manner/result complementarity.
- In the course of the paper, they devise truth–conditional diagnostics to identify manner and result in a verb's meaning independently, applying three different tests each.
- Thus once the diagnostics are carried out, the question of manner/result complementarity becomes two questions:
 1. Truth-conditional content
 2. Event structure

Verbs of Killing: A Typology

- Among Levin's (1993) classification are "verbs of killing", which she divides into two subclasses:
 1. **Murder Verbs** such as *execute, kill, murder*; which all describe killing, but don't provide any information about how the killing came about
 2. **Poison Verbs** such as *crucify, drown, hang*; which relate to actions which can be ways of killing, lexicalising a mean component
- B&K-G now define a class of **Manner-of-Killing Verbs** containing verbs such as *crucify, drown, electrocute, hang*; entailing that the action they denote results in death, therefore in fact entailing both manner and result.

Manner-of-Killing Verbs

- B&K-G develop result and manner diagnostics, motivated by comparing their application to (supposedly) canonical result and manner verbs, emphasising their distinction.
 - Result verbs such as *break*, *clean*, *destroy*
 - Manner verbs such as
 1. *blink*, *jog*, *run* (unergative)
 2. *scrub*, *sweep*, *wipe* (transitive)
 - Application of the tests to manner-of-killing verbs shows that they pass all of the tests.
- Manner-of-killing verbs thus represent both manner+result.
- Existence of a third class of mixed verbs?

Outline

Introduction

Background

Verbs of Killing: A Typology

Result Meanings and Manner-of-Killing Verbs

Manner-Encoding and Manner-of-Killing Verbs

Other Classes of Manner+Result Verbs

Manner, Result, and the Architecture of Event Structure

Complementarity in Event Structures

The Decomposition of Manner+Result Predicates

Manner+Result Roots as “Result” Roots

Manner+Result Roots as “Manner” Roots

Conclusion

Result Meanings and Manner-of-Killing Verbs

To examine the different result diagnostics, we need to define what is meant by a result:

“[denote] events of scalar change . . . where a scale is a set of degrees – points or intervals indicating measurement values – on a particular dimension (e.g., height, temperature, cost), with an associated ordering relation.” – RH&L (2010)

→ Results encode some change measured along a scale of possible values in some property of the patient.

Since RH&L do not lay out diagnostics for resulthood rooted in this definition, B&K–G develop three independent tests showing along the way that manner–of–killing verbs pass these tests and thus are result–encoding.

Result Diagnostic #1: Denial of Result

- In an event change along a scale, the patient necessarily has a different degree of the scale value at the end of the event than at the beginning.
- It should be contradictory to follow any predicate headed by a result verb with a denial that the patient has undergone a change in some named property.
 - (2) a. #Shane just broke the vase, but nothing is different about it.
 - b. #Shane just shattered the bottle, but nothing is different about it.
 - c. #Shane just destroyed his house, but nothing is different about it.

Result Diagnostic #1: Denial of Result

- In an event change along a scale, the patient necessarily has a different degree of the scale value at the end of the event than at the beginning.
- It should be contradictory to follow any predicate headed by a result verb with a denial that the patient has undergone a change in some named property.
- Manner verbs on the other hand fail to generate a contradiction with continuations that deny a result.
 - (3) a. Tracey just swept the floor, but nothing is different about it.
 - b. Tracey just wiped the floor, but nothing is different about it.

Result Diagnostic #1: Denial of Result

- In an event change along a scale, the patient necessarily has a different degree of the scale value at the end of the event than at the beginning.
- It should be contradictory to follow any predicate headed by a result verb with a denial that the patient has undergone a change in some named property.
- Manner-of-killing verbs generate a contradiction in this frame, **patterning with result verbs**.
 - (4) a. #Jane just drowned Joe, but nothing is different about him.
 - b. #Jane just hanged Joe, but nothing is different about him.
 - b. #Jane just crucified Joe, but nothing is different about him.

Result Diagnostic #2: Object Deletion

- Transitive manner verbs, but not transitive result verbs, permit their objects to be omitted in certain contexts.
- If scalar change involves a change-of-state (BECOME) subevent of which the patient is the sole participant, then it must be realised.
- Conversely, since transitive manner verbs do not encode scalar change, there is no additional subevent beyond the manner (ACT), and the object may be deleted.
 - (5)
 - a. Kim scrubbed the floor.
 - b. All last night, Kim scrubbed.
 - (6)
 - a. Kim broke the vase.
 - b. *All last night, Kim broke.

Result Diagnostic #2: Object Deletion

- Transitive manner verbs, but not transitive result verbs, permit their objects to be omitted in certain contexts.
- If scalar change involves a change-of-state (BECOME) subevent of which the patient is the sole participant, then it must be realised.
- Conversely, since transitive manner verbs do not encode scalar change, there is no additional subevent beyond the manner (ACT), and the object may be deleted.
- Again, manner-of-killing verbs behave like result verbs:
 - (7) a. *All last night, Shane crucified.
 - b. *All last night, the executioner electrocuted.
 - c. *All last night, Shane drowned.

Result Diagnostic #3: Restricted Resultatives

- With respect to possible resultative constructions the verb may appear in, manner verbs are generally less constrained than result verbs.
- Recap: Resultatives?
- A verb with no lexically specified scale can appear with a variety of results.
 - (8) a. Cinderella scrubbed the table clean/shiny/bare.
 - b. Cinderella scrubbed her knees sore.
 - c. Cinderella scrubbed the dirt off the table.
 - d. Cinderella scrubbed her housecleaning competitors out of business.

Result Diagnostic #3: Restricted Resultatives

- With respect to possible resultative constructions the verb may appear in, manner verbs are generally less constrained than result verbs.
 - Recap: Resultatives?
 - A verb with no lexically specified scale can appear with a variety of results.
 - In contrast, verbs which have lexically specified scales are very restricted in the kinds of resultatives they can appear with.
- (9)
- a. Then the biologists dimmed the room to the level of starlight.
 - b. *We dimmed the room empty.
 - c. *Kim dimmed her eyes sore.

Result Diagnostic #3: Restricted Resultatives

- Once again, manner-of-killing verbs pattern like result verbs on this diagnostic, in that the result XPs they occur with are more restricted.
 - (10) a. #Shane electrocuted the prisoner to a crisp.
 - b. #Shane drowned Sandy blue.
 - c. #Shane hanged the prisoner thin.
 - d. #The Romans crucified Jesus to the tomb.

Interim Summary

- B&K–G have reviewed three truth–conditional diagnostics for results:
 1. Denial of Result
 2. Object deletion
 3. Restricted resultatives
- All were based to some degree on the definition of result as scalar change.
- All are technically independent of whether any given verb also encodes a manner.
- Every diagnostic indicates that manner–of–killing verbs encode a result, though we have not yet shown that they also encode a manner.

Outline

Introduction

Background

Verbs of Killing: A Typology

Result Meanings and Manner-of-Killing Verbs

Manner-Encoding and Manner-of-Killing Verbs

Other Classes of Manner+Result Verbs

Manner, Result, and the Architecture of Event Structure

Complementarity in Event Structures

The Decomposition of Manner+Result Predicates

Manner+Result Roots as “Result” Roots

Manner+Result Roots as “Manner” Roots

Conclusion

Manner-Encoding and Manner-of-Killing Verbs

- B&K–G adopt RH&L’s definition of manner as nonscalar change:

“A nonscalar change is any change that cannot be characterized in terms of an ordered set of values of a single attribute . . . The vast majority of nonscalar changes deviate from scalar changes in another, more significant respect: they involve complex changes – that is, a combination of multiple changes – and this complexity means that there is no single, privileged scale of change. – RH&L (2010)

- A manner is a complex sequence of separate changes that collectively define an action, but do not necessarily add up to a single cumulative change along any one dimension.
- *blink, jog, yell, run* (unergatives)
 - *scrub, sweep, wipe* (transitives)

Manner-Encoding and Manner-of-Killing Verbs

- B&K–G adopt RH&L’s definition of manner as nonscalar change.
- RH&L identify manner verbs by looking at their behaviour in comparison to result verbs: if result verbs do not have a certain property, manner verbs must have it.
- B&K–G argue that this is an erroneous conclusion.
- Theorising that if a verb is not a resultative, it must encode manner also only allows for a binary deduction, i.e. 2 classes of verbs; result and manner.
- They therefore develop three separate diagnostics to identify manner independently, allowing for a class of verbs that encode both manner and result.

Manner Diagnostic #1: Selectional Restrictions

- If a transitive verb has a manner component in its meaning, then it imposes selectional restrictions on its subject.
- Manner verbs do not allow inanimate objects or forces of nature as their subject.
- Result verbs impose less restrictions on subjects.
- This contrast between result and manner follows if result but not manner verbs require specific action of their subjects.

- (11)
- a. John broke/shattered the vase with a hammer.
 - b. The hammer broke/shattered the vase.
 - c. The earthquake broke/shattered the vase.

Manner Diagnostic #1: Selectional Restrictions

- If a transitive verb has a manner component in its meaning, then it imposes selectional restrictions on its subject.
 - Manner verbs do not allow inanimate objects or forces of nature as their subject.
 - Result verbs impose less restrictions on subjects.
 - This contrast between result and manner follows if result but not manner verbs require specific action of their subjects.
- (12)
- a. John scrubbed/wiped the floor with a stiff brush.
 - b. #The stiff brush scrubbed/wiped the floor.
 - c. #The earthquake scrubbed/wiped the floor.

Manner Diagnostic #1: Selectional Restrictions

- Manner-of-Killing verbs pattern like manner verbs, they also place restrictions on their subjects, disallowing inanimates or natural forces.
 - (13)
 - a. John hanged/crucified Jesus with sailing rope.
 - b. #Sailing rope hanged/crucified Jesus.
 - c. #The wind hanged/crucified Jesus.
 - (14)
 - a. The revolutionaries guillotined the queen with a rusty blade.
 - b. #The rusty blade guillotined the queen.
 - c. #The heavy wind guillotined the queen.

Manner Diagnostic #2: Denial of Action

- As manner category is so large, B&K–G state that it is difficult to find a generalised pattern associated with it.
- They indicate that finding a verb that encodes **one** type of manner, as well as a result, is sufficient evidence for a class of manner+result verbs.
- They focus on manner verbs related to movement of the human body in exhibiting a certain action, implying a change (though not of a scalar nature, i.e. no lasting effect).
- It is contradictory to assert that movement has taken place but the actor *didn't move a muscle*:

(15) #Jim ran/jogged/blinked, but did not move a muscle.

Manner Diagnostic #2: Denial of Action

- Since result verbs do not specify how the result came about, it is possible to deny how an action was performed.
- Rather than taking an action that leads to a result, a result can occur through negligence or non-action:

(16) Jim destroyed his car, but did not move a muscle – rather, after he bought it he just let it sit on his neighbour's lawn on cinder blocks, untouched, until it disintegrated!

→ B&K–G: At least some result verbs do not encode actor-hood.

Manner Diagnostic #2: Denial of Action

- Manner-of-killing verbs pattern like manner-of-motion verbs.
- To say that a person performed the action encoded in a manner-of-killing verb but *did not move a muscle*, even by negligence, is contradictory.
 - (17) a. #The governor crucified/electrocuted the prisoner, but didn't move a muscle – rather, after taking office she failed to issue a pardon!
 - b. #The governor drowned/hanged the prisoner, but didn't move a muscle – rather, during the execution she just sat there, tacitly refusing to order a halt!

Manner Diagnostic #3: Complexity of Action

- A manner verb is complex, consisting of a series of separate changes within one lexical item.
- A manner verb should be durative.
- Standard durativity test is take/spend an hour:
 - (18) a. Punctual (telic) predicates:
take an hour → ‘after an hour’
It took John five minutes to blink/clap/jump.
 - b. Durative telic predicates:
take an hour → ‘during/after an hour’
It took five minutes to build/carve/make the toy.
 - c. Durative atelic predicates:
spend an hour → ‘during an hour’
*John spent five minutes
exercising/playing/running.*

Manner Diagnostic #3: Complexity of Action

- The correlation of complex – simplex manners to durativity – punctuality for uncontroversial manner verbs is as follows:
 - (19) a. #It took Jim five minutes to blink (once).
(‘after five minutes’; punctual)
 - b. #John spent five minutes running.
(‘during five minutes’; durative)
- Applied to result verbs, changes along multiple scales result in durative predicates, whilst changes along two-point scales result in punctual predicates:
 - (20) a. #It took Jim five minutes to break the window.
(‘after five minutes’; punctual)
 - b. #It took Jim five minutes to clean the table.
(‘after/during five minutes’; durative)

Manner Diagnostic #3: Complexity of Action

- Manner-of-killing have a manner component.
- A manner-of-killing verb operates upon a two-point scale.
(not dead → dead)
- Therefore, a manner-of-killing verb should be punctual.
- Applying the take/spend an hour diagnostic identifies manner-of-killing verbs to be either punctual or durative.

(21) It took me five minutes to drown/hang/crucify Jim...
(‘during/after five minutes’)

AFTER because I lacked the courage.

DURING because this is how long it takes to kill someone by holding them under water/cutting off their air/nailing them down, hoisting them up, and waiting.

Interim Summary

- The three independent diagnostics that have been developed by B&K–G show that manner–of–killing verbs encode an element of manner as well as result.
- Contrary to RH&L, it is not possible to cancel out either the manner or result component, both are encoded within the verbs meaning.
- Result tests are based on canonical result verbs, manner tests are based on manner verbs.
- This counterexemplifies the manner/result complementarity as truth–conditional fact about possible verb meanings.

Other Classes of Manner+Result Verbs

- Manner+result verbs are not restricted to manner-of-killing verbs, as manner-of-cooking and ballistic motion verbs also encode both manner and result components.

Ballistic Motion Verbs

Pass the **contradiction diagnostic** → result component:

- (22)
- #Mary just flipped John the empty can, but it is not somewhere else.
 - #Mary just tossed John the ball, but it is not somewhere else.
 - #Mary just threw John the ball, but it is not somewhere else.

Other Classes of Manner+Result Verbs

- Manner+result verbs are not restricted to manner-of-killing verbs, as manner-of-cooking and ballistic motion verbs also encode both manner and result components.

Ballistic Motion Verbs

Pass the **actor-orientated test** → manner component:

- (23) [A tennis coach sets up a ball machine that sends balls to the students, and puts Isaac in charge of the machine, telling him to stop it at 4:00 p.m.]
- ?? Isaac flipped/threw/tossed the kids the balls after 4:00 p.m., but didn't move a muscle – rather, he failed to stop the ball machine at the specified time.

Other Classes of Manner+Result Verbs

- Manner+result verbs are not restricted to manner-of-killing verbs, as manner-of-cooking and ballistic motion verbs also encode both manner and result components.

Ballistic Motion Verbs

Pass the **selectional restrictions tests** → manner component:

- (24)
- John flipped/threw/tossed Sandy the ball with his new glove.
 - #The new glove flipped/threw/tossed Sandy the ball.
 - #The wind flipped/threw/tossed Sandy the ball.

→ Ballistic motion verbs are, therefore, manner+result.

Other Classes of Manner+Result Verbs

- Manner+result verbs are not restricted to manner-of-killing verbs, as manner-of-cooking and ballistic motion verbs also encode both manner and result components.

Manner-of-Cooking Verbs

Pass the **contradiction test** → result component:

- (25)
- #Shane just braised the chicken, but nothing is different about it.
 - #Shane just poached the egg, but nothing is different about it.
 - #Shane just sauteed the onions, but nothing is different about them.

Other Classes of Manner+Result Verbs

- Manner+result verbs are not restricted to manner-of-killing verbs, as manner-of-cooking and ballistic motion verbs also encode both manner and result components.

Manner-of-Cooking Verbs

Pass the **object deletion test** → result component:

- (26)
- *All last night, Shane braised.
 - *All last night, Shane poached.
 - ??All last night, Shane saute'ed.

Other Classes of Manner+Result Verbs

- Manner+result verbs are not restricted to manner-of-killing verbs, as manner-of-cooking and ballistic motion verbs also encode both manner and result components.

Manner-of-Cooking Verbs

Pass the **restricted resultatives test** → result component:

- (27)
- #Shane braised the duck to the back of the oven.
 - #Shane poached the egg in half.
 - #Shane saute'ed the onions straight.

Other Classes of Manner+Result Verbs

- Manner+result verbs are not restricted to manner-of-killing verbs, as manner-of-cooking and ballistic motion verbs also encode both manner and result components.

Manner-of-Cooking Verbs

Pass **actor-orientated test** → manner component:

- (28)
- #Shane braised the chicken, but didn't move a muscle.
 - #Shane poached the egg, but didn't move a muscle.
 - #Shane saute'ed the onions, but didn't move a muscle.

Other Classes of Manner+Result Verbs

- Manner+result verbs are not restricted to manner-of-killing verbs, as manner-of-cooking and ballistic motion verbs also encode both manner and result components.

Manner-of-Cooking Verbs

Pass **selectional restriction test** → manner component:

- (29)
- Shane braised/saute'ed the duck in a new Le Creuset pan.
 - ??Shane's Le Creuset pan braised/saute'ed the duck perfectly.
 - ??The heatwave/even heat braised/sauteed the duck to perfection.

→ Manner-of-cooking verbs are, therefore, manner+result.

Outline

Introduction

Background

Verbs of Killing: A Typology

Result Meanings and Manner-of-Killing Verbs

Manner-Encoding and Manner-of-Killing Verbs

Other Classes of Manner+Result Verbs

Manner, Result, and the Architecture of Event Structure

Complementarity in Event Structures

The Decomposition of Manner+Result Predicates

Manner+Result Roots as “Result” Roots

Manner+Result Roots as “Manner” Roots

Conclusion

Summary and Outlook

What do we have so far?

- Diagnostics for manner and result in a verb's meaning
- Examples for verbs that have both meaning components (manner-of-killing, ballistic motion, manner-of-cooking)
- Thus a counter-exemplification of the manner/result complementarity as a truth conditional fact about verb meaning (as claimed by RH&L)

Summary and Outlook

What do we have so far?

- Diagnostics for manner and result in a verb's meaning
- Examples for verbs that have both meaning components (manner-of-killing, ballistic motion, manner-of-cooking)
- Thus a counter-exemplification of the manner/result complementarity as a truth conditional fact about verb meaning (as claimed by RH&L)

What else do we need?

- The theoretical consequences of B&K-G's theory
- Complementarity may determine possible event structures, but in a way that also allows manner+result verbs.

Complementarity in Event Structures

RH&L explain manner/result complementarity based on the properties of event structures:

- A monomorphemic verbal lexeme consisting of at least ...
 - a monomorphemic morphological root paired with
 - a single event structure built of basic event-denoting predicates (CAUSE, BECOME, ACT)
- A lexical semantic root filling in the real-world details

Complementarity in Event Structures

RH&L explain manner/result complementarity based on the properties of event structures:

- A monomorphemic verbal lexeme consisting of at least ...
 - a monomorphemic morphological root paired with
 - a single event structure built of basic event-denoting predicates (CAUSE, BECOME, ACT)
- A lexical semantic root filling in the real-world details

... and their definition of a **Lexicalization Constraint**:

"A root can only be associated with one primitive predicate in an event schema, as either an argument or a modifier." – RH&L (2010)

Complementarity in Event Structures

"A root can only be associated with one primitive predicate in an event schema, as either an argument or a modifier." – RH&L (2010)

This results in the following event structures:

- (30)
- a. [x ACT_{⟨ROOT⟩}]
 - b. [x ACT] CAUSE [y BECOME ⟨ROOT⟩]
 - c. *[[x ACT_{⟨ROOT⟩}] CAUSE [y BECOME ⟨ROOT⟩]]

Complementarity in Event Structures

"A root can only be associated with one primitive predicate in an event schema, as either an argument or a modifier." – RH&L (2010)

This results in the following event structures:

- (30)
- a. [x ACT_{⟨ROOT⟩}]
 - b. [x ACT] CAUSE [y BECOME ⟨ROOT⟩]
 - c. *[[x ACT_{⟨ROOT⟩}] CAUSE [y BECOME ⟨ROOT⟩]]
 - d. *[[x ACT_{⟨ROOT₁⟩}] CAUSE [y BECOME ⟨ROOT₂⟩]]

The last event structure is not ruled out a priori, yet RH&L assume that it cannot be associated with a single monomorphemic lexem. Otherwise, we would arrive at a "lexical resultative", which would by definition be manner+result encoding.

Complementarity in Event Structures

Manner/result complementarity follows from two theoretical assumptions about event structures (RH&L):

1. There is only ever one root per lexeme.
2. A root meaning can contribute either manner or result, but not both.

Complementarity in Event Structures

Manner/result complementarity follows from two theoretical assumptions about event structures (RH&L):

1. There is only ever one root per lexeme.
 2. A root meaning can contribute either manner or result, but not both.
- However, B&K–G have shown that complementarity does not hold truth-conditionally.
 - Thus, if the two above assumptions derive it, at least one of them **must be wrong**.
 - They argue in favour of the first assumption, disproving the second one.

Complementarity in Event Structures

Manner/result complementarity follows from two theoretical assumptions about event structures (RH&L):

1. There is only ever one root per lexeme. ??
 2. A root meaning can contribute either manner or result, but not both. ??
- The above assumptions are not of the same order:
 1. is a claim about how **event structures** are (de)composed
 2. is a claim about how much and what types of **truth-conditional content** can be encoded²
- The diagnostics needed to validate the first assumption may differ from those needed for the second assumption.

²in a single root

Complementarity in Event Structures

1. There is only ever one root per lexeme. ??
 2. A root meaning can contribute either manner or result, but not both.
- To identify diagnostics for (1.), we look at the key property of event-structural approaches to verb meaning: word meanings contain **linguistically significant hierarchical structure**.
 - Standard data motivating a decompositional analysis of caused change-of-state predicates are the ambiguities of scopal adverbs such as *again*, which generate two readings:
 1. **restitutive** (restoring a previous state)
 2. **repetitive** (performing an action again that had led to an instance of the given state obtaining)

Complementarity in Event Structures

1. There is only ever one root per lexeme. ??
 2. A root meaning can contribute either manner or result, but not both.
- Standard data motivating a decompositional analysis of caused change-of-state predicates are the ambiguities of scopal adverbs such as *again*, which generate two readings:
 1. **restitutive** (restoring a previous state)
 2. **repetitive** (performing an action again that had led to an instance of the given state obtaining)
- (31) a. John opened the door again.
b. John flattened the metal again.

Complementarity in Event Structures

1. There is only ever one root per lexeme. ??
2. A root meaning can contribute either manner or result, but not both.

- (32) a. John **opened the door again**.
b. John **flattened the metal again**.

- Explanation in the structure of event structures: a larger event of caused change embeds a result root, and *again* may take scope over either **the result root** or the larger event.

Complementarity in Event Structures

1. There is only ever one root per lexeme. ??
2. A root meaning can contribute either manner or result, but not both.

- (32) a. John **opened the door again**.
 b. John **flattened the metal again**.

- Explanation in the structure of event structures: a larger event of caused change embeds a result root, and *again* may take scope over either **the result root** or the larger event.

- (33) a. $[[x \text{ ACT}] \text{ CAUSE } [y \text{ BECOME } \langle \text{again}(\text{open}) \rangle]]$
 b. $\text{again}([[x \text{ ACT}] \text{ CAUSE } [y \text{ BECOME } \langle \text{open} \rangle]])$

Complementarity in Event Structures

1. There is only ever one root per lexeme. ??
 2. A root meaning can contribute either manner or result, but not both.
- Moreover, given the semantic opacity of roots, they are scopal units with regard to *again*, no matter how complex the meaning of the root itself.
 - The result state of **a.** is complex, involving a series of conditions such that every part of the table is clear. Yet in restitutive **b.**, *again* must take scope over the entire result, so that once again the entire table has nothing on it:
- (34) a. John cleared the table.
b. John cleared the table again.

Complementarity in Event Structures

1. There is only ever one root per lexeme. ??
 2. A root meaning can contribute either manner or result, but not both.
- Key ingredients of decomposition:
 1. Composition of basic decomposition operators and lexical semantic roots
 2. Hierarchically built structure
 - Assuming the template for manner+result verbs is caused change of state, one assumption can be eliminated by investigating these verb's behaviour with scopal modifiers.
- If assumption (2.) is invalid (i.e. manner+result roots exist), *again* should never take scope over one to the exclusion of the other (e.g., restitutive readings should be impossible).

The Decomposition of Manner+Result Predicates

- How do predicates encoding both manner and result with **two morphological roots** behave?
- *Again* can take scope over just the result component to the exclusion of the manner component:

- (35)
- a. Mary made a sheet of metal that is flat, but it later accidentally became bent. Fortunately, John hammered the metal flat again.
 - b. Mary bought a new front door for her house, and installed it in an open position. Later, the wind blew it closed, so John kicked it open again.
 - c. Mary, a natural redhead since birth, decided to dye her hair bright green. However, after seeing herself in the mirror she was mortified, so she went to the hairdresser and he dyed it red again.

The Decomposition of Manner+Result Predicates

- For each manner+result predicate with **two morphological roots**, the reading is restitutive:

(36) $[[x \text{ ACT}_{\langle \textit{hammering} \rangle}] \text{ CAUSE } [y \text{ BECOME } \langle \textit{again}(\textit{flat}) \rangle]]$

- Does this extend to **monomorphemic** manner+result verbs?

(37) $[[x \text{ ACT}_{\langle \textit{drowning} \rangle}] \text{ CAUSE } [y \text{ BECOME } \langle \textit{dead} \rangle]]$

- If so, *again* should be able to take scope solely over the result.
- If so, we would reject assumption (1.) and retain (2.):
 1. There is only ever one root per lexeme.
 2. A root meaning can contribute either manner or result, but not both.

The Decomposition of Manner+Result Predicates

(38) John drowned the zombie again.

MEANS 'John caused the zombie to be dead by drowning again.'

CANNOT MEAN 'John caused the zombie to become dead again by drowning, but the last time he was killed it was with a chainsaw.'

→ *Again* necessarily takes scope over **both** meaning components.

The Decomposition of Manner+Result Predicates

(38) John drowned the zombie again.

MEANS 'John caused the zombie to be dead by drowning again.'

CANNOT MEAN 'John caused the zombie the become dead again by drowning, but the last time he was killed it was with a chainsaw.'

→ *Again* necessarily takes scope over **both** meaning components.

- (39)
- The sheriff hanged the zombie outlaw again.
 - The Romans crucified the zombie leader again.
 - The governor electrocuted the zombie prisoner again.
 - Dr. Frankenstein guillotined the zombie again.

The Decomposition of Manner+Result Predicates (in sum)

- Complementarity in event structures:
 1. There is only ever one root per lexeme.
 2. ~~A root meaning can contribute either manner or result, but not both.~~
- Monomorphemic manner+result verbs in fact encode both manner and result.
- This contradicts RH&L's second assumption.
- While there are possibilities to maintain a lexical resultative analysis, B&K-G turn to an alternative analysis that instead maintains assumption (1.) but rejects (2.), and show that it captures all the data without any additional requirements.

Manner+Result Roots as “Result” Roots

- An alternative would be that manner-of-killing verbs allow restitutive attachment, but restitutive attachment gives rise to a repetitive reading.
- These “result” roots also encode manner!
- Nothing a priori rules out a result root from encoding not just a result, but also that . . .
 1. the result has a cause
 2. the cause is of a certain type
- Thus, manner-of-killing verbs predicate a result *dead* of their single individual arguments, but also say that it must have a cause, and further that any such cause is of a certain type.
- These meaning definitions do not directly predicate the causing events, but restrict what the event can be.

Manner+Result Roots as “Result” Roots

- There also is independent motivation for assuming a class of manner+result roots.
- Roots denoting states come in two varieties:
 1. basic “property concept” roots; denoting simple states
 2. “caused-result” roots; denoting states that necessarily arise because of a prior event of change (*melt, rip, thaw*)
- Words of the first class are generally morphologically simple and do not entail an event of change.
- Words of the second class are generally deverbal³ and do entail an event of change.

³derived from a verb

Manner+Result Roots as “Result” Roots

- Words of the first class are generally morphologically simple and do not entail an event of change.
- Words of the second class are generally deverbal and do entail an event of change.

E.g. Whereas *red* underlies *redden*, there is no basic adjective underlying *thaw*.

E.g. *The book is red* entails no reddening, but *The ice is thawed* entails a thawing.

Manner+Result Roots as "Result" Roots

- Verbs containing caused-result roots also have only repetitive readings with *again*:

- (40) a. John thawed the meat again.
b. John melted the soup again.

→ Manner-of-killing verbs pattern like verbs with caused-result roots.

- No underlying basic adjectives (no adjective for *guillotine*)
- Adjectives based on them are deverbal and entail a prior event (#He was guillotined, but there was no guillotining.)
- *Again* has only repetitive reading

Manner+Result Roots as “Result” Roots

- Manner-of-killing verbs pattern like verbs with caused-result roots.
- The only difference is that manner-of-killing roots encode not just that there was a cause, but also a specific manner, and if they occupy result root position, the lack of a restitutive reading follows.

Manner+Result Roots as "Manner" Roots

- Since manner-of-cooking verbs do not normally denote a change of state occurring twice, B&K-G focus on ballistic motion verbs to examine whether the same scope facts apply for other verb classes.

- (41)
- a. John flipped Sandy the can again.
 - b. John threw Sandy the ball again.
 - c. John tossed Sandy the packet of peanuts again.

→ *Again* takes scope over the possession but not the throwing, suggesting that there are **two roots**, counterexemplifying complementarity as a claim about event structures (B&K-G).

Manner+Result Roots as "Manner" Roots

→ *Again* takes scope over the possession but not the throwing, suggesting that there are **two roots**, counterexemplifying complementarity as a claim about event structures.

BUT The result state of possession found in double object constructions is contributed not by the root but by the event structures itself via some primitive *HAVE* predicate.

→ All double object constructions require possession regardless of the root that occurs in them.

→ Conversely, the roots of *throw*-type verbs contribute the ballistic manner and a separate result of releasing.

Manner+Result Roots as "Manner" Roots

- Conversely, the roots of *throw*-type verbs contribute the ballistic manner and a separate result of releasing.
- *Again* takes scope over just the result contributed by HAVE, and nothing contributed by the root.
- This can easily be accommodated if the roots of ballistic motion verbs occupy the position of manner roots rather than that of result roots:

- (42) a. $[[x \text{ ACT}_{\langle \text{throwing} \rangle} z] \text{ CAUSE } [y \text{ HAVE } z]]$
 b. $[[x \text{ ACT}_{\langle \text{throwing} \rangle} z] \text{ CAUSE } ([y \text{ again}(\text{HAVE}) z])]$

- In a. there is only one root in the event structure, correctly predicting the the behaviour of *again* with ballistic motion verbs.

Outline

Introduction

Background

Verbs of Killing: A Typology

Result Meanings and Manner-of-Killing Verbs

Manner-Encoding and Manner-of-Killing Verbs

Other Classes of Manner+Result Verbs

Manner, Result, and the Architecture of Event Structure

Complementarity in Event Structures

The Decomposition of Manner+Result Predicates

Manner+Result Roots as “Result” Roots

Manner+Result Roots as “Manner” Roots

Conclusion

Manner+Result Roots versus Lexical Resultatives

- The lack of restitutive readings for manner+result verbs is accommodated given the assumption that these verbs contribute only one root meaning at a time:
 1. There is only ever one root per lexeme.
 2. ~~A root meaning can contribute either manner or result, but not both.~~
- Three different types of roots:
 - **Result** roots, such as *destroy*, *redde*n
 - **Manner** roots, such as *jog*, *run*
 - **Manner+Result** roots, e.g. manner-of-killing verbs
- Alternatives (multiple roots in “lexical resultative” structure) would require additional mechanisms to rule out restitutive readings otherwise attested with resultative event structures.

Conclusion

- Word meanings are an important issue in lexical semantics.
- RH&L: No single verb encodes both manner and result.
- B&K–G: Tension between a verb's literal meaning and the possible event structure determining this meaning!
- Three independent, truth-conditional diagnostics (qua scalar and nonscalar change) for manner and result meaning
- Manner–of–killing, ballistic motion, and manner–of–cooking verbs encode both manner and result, counterexemplifying RH&L's manner/result complementarity hypothesis.
- Scopal diagnostics revealed how RH&L's first key assumption is valid: there is only one root per verb.
- There must be a third class of manner+result roots.

Discussion – Starting point




Selectional restrictions?

- If a transitive verb has a manner component in its meaning, then it imposes selectional restrictions on its subject.
- Manner verbs do not allow inanimate objects or forces of nature as their subject.

- (43) a. The storm rages.
b. The river flows.

Any questions?

Bibliography

-  John Beavers and Andrew Koontz-Garboden. 2012. Manner and Result in the Roots of Verbal Meaning. In *Linguistic Inquiry*, 43:331-369.
-  Malka Rappaport Hovav and Beth Levin. 2010. Reflections on manner/result complementarity. In *Syntax, lexical semantics, and event structure*, ed. by Edit Doron, Malka Rappaport Hovav, and Ivy Sichel, 21–38. Oxford: Oxford University Press.
-  Beth Levin. 1993. English verb classes and alternations: A preliminary investigation. Chicago: University of Chicago Press.