

Causing Resultative Passives*

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1. Introduction

Embick (2004) divides adjectival passives into statives and resultative passives (and refers to verbal passives as “eventive” passives).

- (1) The door was closed.
 - a. *Eventive/Verbal Passive*
Someone closed the door.
 - b. *Adjectival Passives*
 - i. *Resultative Passive*
The door was in a state of having become closed.
 - ii. *Stative*
The door was in a closed state.

Sometimes, statives are morphologically distinct from resultatives and eventives: *opened* (resultative or eventive) vs. *open* (stative).

Embick uses the following features to classify different types of passives:

| Type | Eventivity | Agentivity |
|-------------|------------|------------|
| Eventive | ✓ | ✓ |
| Resultative | ✓ | – |
| Stative | – | – |

Syntactically, these are realized in the following ways:

*Thanks to three anonymous ConSOLE reviewers for feedback and suggestions. Thanks to Rong Yin for suggesting Deal (2009) as a place to look for information about the syntax of unaccusative verbs. Thanks to the participants of the Fall 2016 UMass syntax seminar for feedback. Any errors remaining are my own.

- Statives are created by an aspectual head attaching directly to a root.
- Resultative passives are created by an aspectual head attaching to a projection of v_{FIENT} .
- Eventive/verbal passives are created by an aspectual head attaching to a projection of v_{AGENT} .

Recently, however, many have shown that resultative passives can occur with phrases taken as diagnostic of syntactic agentivity (Alexiadou, Anagnostopoulou, & Schäfer 2015; Alexiadou, Gehrke, & Schäfer 2014; Anagnostopoulou 2003, 2013; Bruening 2014; Gehrke 2015; McIntyre 2013), prompting a reanalysis of the resultative passive as agentive.

I argue instead that the resultative passive is causative, not agentive.

2. Diagnostics for Resultatives

Embick (2004) provides some diagnostics for distinguishing resultative passives from statives and from eventive passives. I make use of two of these:

- (2) *Productivity of un- Prefixation*
 - a. *Resultative Passives*: ✓
The door was unopened.
 - b. *Eventive Passives*: ☹
* The door was unopened.
(= “Someone unopened the door.”)
 - c. *Statives*: ☹
* The door was unopen.

- (3) *Occurrence with non-BE Copular Predicates*

- a. *Resultative Passives*: ✓
The door { remained / seemed / ... } opened.
- b. *Eventive Passives*: ☹
The door { remained / seemed / ... } opened.
(≠ “Someone { remained / seemed / ... } to open the door.”)
- c. *Statives*: ✓
The door { remained / seemed / ... } open.

2.1 Embick's Evidence against Agentivity

(4) Availability of Coreferential Interpretation

- a. *Resultative Passives*: ✓
The children are washed. They did it themselves.
- b. *Eventive Passives*: ☹
The children are being washed. #They are doing it all by themselves.

The disjoint reference effect in (4b) signals the syntactic presence of an implicit agent argument (e.g., Baker, Johnson, & Roberts 1989). Resultative passives lack this effect, and so are taken to lack an implicit agent.

(5) Agentive *by*-phrases

- a. *Resultative Passives*: ☹
The metal is hammered by John.
(≠ The metal is in a state of having been hammered by John.)
- b. *Eventive Passives*: ✓
The metal is hammered by John.
(= John habitually hammers the metal.)

The availability of an agentive *by*-phrase is taken to show that an agent is syntactically present. Since a *by*-phrase is not licensed with resultative passives, Embick argues that there is no syntactic implicit agent.

3. Agentive Resultatives

Bruening (2014), McIntyre (2013), and Meltzer-Asscher (2012) argue that Embick (2004) is mistaken: resultative passives can occur with agentive *by*-phrases and can display disjoint reference effects.

(6) Resultatives with *by*-phrases

- a. The road remained { blocked by police / supported by pylons }.
- b. This tree seems eaten by caterpillars.
- c. Little nature remains untouched by human hands.

- A *by*-phrase can be licensed when (McIntyre 2013; Meltzer-Asscher 2012):

- The referent is responsible for continuing the state expressed by the participle (6a).
- The referent's sortal specifications are crucial to the nature of the state (6b-c).

(7) Lack of Coreferential Readings (McIntyre 2013)

- a. # John criticized himself, but to me he seemed unfairly criticized.
- b. # He had self-hate problems and remained very hated until he sought help.

McIntyre (2013) and Bruening (2014) attribute the availability of coreference with resultative passives to particular verb classes (cf. Schäfer 2012a).

- Naturally/inherently reflexive verbs allow a coreferential reading.
- Naturally disjoint verbs disfavor such a reading.

4. Causative Resultatives

4.1 Diagnostics for Causativity

There are two diagnostics for syntactic causativity proposed in the literature. Unfortunately, they only work for unaccusative verbs, and must be applied carefully.

- (8) *Licensing of by itself* (= “no particular cause”)
(Alexiadou et al. 2015; Koontz-Garboden 2009)
- a. The ship sank by itself.
 - b. * The ship was sunk by itself.

- The availability of a *by itself* phrase distinguishes inchoative uses of verbs from passive uses.
- Applying this to resultative passives must be done carefully: I argue that the resultative passive involves existentially binding a causing event. A *by itself*-phrase involves asserting the non-existence of a causing event, so using one with a resultative passive would result in a contradiction.

- (9) *There-insertion* (Deal 2009)
- a.
 - i. The ice cream melted by itself.
 - ii. * There melted some ice cream in the heat.
 - b.
 - i. # The portrait hung on the wall by itself.
 - ii. There hung a portrait on the wall.

- *There*-insertion is blocked for causative unaccusatives (Deal 2009).

4.2 Readings of the Resultative Passive

Our diagnostics for causativity only work with unaccusative verbs. But considering the readings of the resultative passive of transitive verbs supports the presence of an implicit causer.

Consider McIntyre (2013)’s example again:

- (10) The road remained blocked by police.

There are two possible readings of the verb *blocked*: one agentive, and one causative.

- (11) a. *Agentive blocked*
The police blocked the road (with traffic cones, and then they went home for the day).
- b. *Causative blocked*
- i. Fallen trees blocked the road.
 - ii. The police blocked the road (for hours).

The causative reading requires that the subject be present while the object is being blocked. It is only this reading that allows a resultative passive.

- (12) a. *Agentive:*
The police blocked the road with traffic cones, and left for the day. Even though they were supposed to, they forgot to come pick them up in the afternoon.
In fact, that evening, the road remained blocked by police.
- b. *Causative:*
The police blocked the road starting in the morning, and it didn’t seem like they’d ever leave.
In fact, that evening, the road remained blocked by police.

A possible problem? (McIntyre 2013):

- (13) The dictator remained underestimated by the warlords.

Here, *underestimate* seems to require an agentive subject.

I attribute this to encyclopedic knowledge: to underestimate someone requires that the underestimator have a mind. Similar restrictions hold for periphrastic causatives, where the subject is typically taken to be a true causer rather than an agent (Levin 2009).

- (14) a. John made Mary leave the party.
- b. ?? The storm made Mary leave the party.

In cases when the sortal specifications of the *by*-phrase referent are crucial to the nature of the state, I suggest that it is only at this level of granularity that the “agent” can be considered a causer. Note that in these cases, the *by*-phrase cannot actually be referential, as it can in a true eventive passive:

- (15) a. % This text seems written by a genius_i. #You’ll be able to meet her_i at the reception.
- b. This text was written by a genius_i. You’ll be able to meet her_i at the reception.

A causative analysis of the resultative passive thus allows us to unify McIntyre (2013)’s generalizations about when *by*-phrases are possible.

- When the *by*-phrase referent is present during the event is when ambiguously agentive/causative verbs can receive causative readings.
- When the sortal features of the *by*-phrase referent are crucial to the nature of the state, we can think of the referent as a kind of causer rather than as a specific agent.

Allowing encyclopedic knowledge to play a role already seems necessary to explaining the presence/absence of disjoint reference effects.

- (16) a. The children seem washed. They did it all by themselves.
- b. The children seem hated. #They have self-hate problems.

It’s unsurprising that encyclopedic knowledge should manifest in several ways.

4.3 Theoretical Motivations for Causative Analysis

Folli & Harley (2005) and Schäfer (2012b) show that causers are only licensed in bi-eventive, resultative contexts.

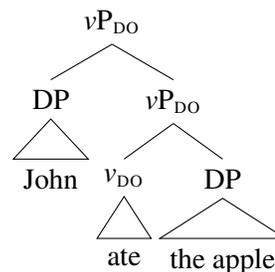
- (17) *Lexically Causative*
 - a. The sea destroyed the beach.
 - b. The groom destroyed the wedding cake.
- (18) *No Resultative Secondary Predicate, Non-Lexically Causative*
 - a. * The sea ate the beach.
 - b. The groom ate the wedding cake.
- (19) *Resultative Secondary Predicate, Non-Lexically Causative*
 - a. The sea ate away the beach.

Note that (18a) disallows a causer subject, but as soon as a resultative secondary predicate is present (19a), it is permitted.

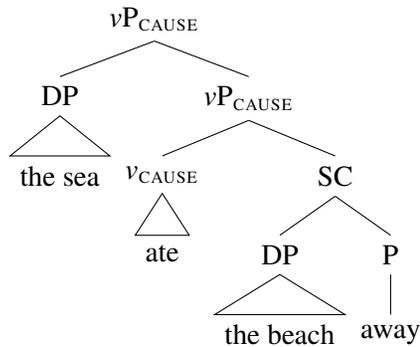
- Furthermore, Folli & Harley (2005) and Schäfer (2012b) recognize that causers may or must be [+HUMAN] in certain cases.

Folli & Harley (2005) propose that v_{CAUSE} c-selects a small clause complement to account for the restrictions on when causers can appear.

- (20) *Agentive vP*

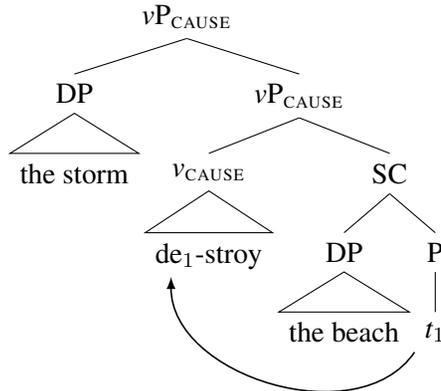


(21) *Causative vP*



Lexically causative verbs underlyingly involve a resultative event structure:

(22)



Folli & Harley (2005) propose that the bi-eventive, resultative restriction holds for canonical nominative causers. Schäfer (2012b) extends this restriction to oblique and PP causers.

- Resultative passives also minimally involve a bi-eventive, resultative event structure: there must have been some event, and a state that resulted from it.

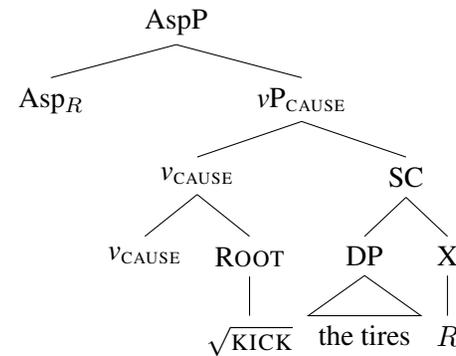
- In cases when the verb doesn't provide a result state, one must be coerced. This is helped by a supportive context (cf. Gese et al. 2011; Maienborn 2009):

(23) The tires are kicked. (from Embick 2004)

- Embick notes (23) is odd out of context, but “given a scenario in which I work in a tire factory, and I have to kick all of the tires before I can go home, it becomes much better” (Embick 2004, p. 361).

4.4 A Causative Syntax and Semantics for the Resultative Passive

(24)



- (25) a. $\llbracket R \rrbracket = \lambda x. \lambda e. R_i(x, e)$
 b. $\llbracket v_{CAUSE} \rrbracket^1 = \lambda f_{\langle s, t \rangle}. \lambda e. \exists e': f(e') \wedge CAUSE(e, e') \wedge kick(e)$
 c. $\llbracket Asp_R \rrbracket = \lambda f_{\langle s, t \rangle}. \exists e. f(e)$

R_i is a free result state variable that is interpreted pragmatically.²

- (26) $\llbracket \text{the tires are kicked} \rrbracket = \exists e, e': R_i(\text{the.tires}', e') \wedge CAUSE(e, e') \wedge kick(e)$

¹Cf. Pyllkkänen (2002, 2008)

²Cf. Partee (1983/1997), Maienborn (2009) and Gese et al. (2011).

- = “There is an eventuality e and an eventuality e' such that a pragmatically given relation holds between the tires and e' , e causes e' , and e is a kicking eventuality.”
- = “A pragmatically determined state that was caused by a kicking event holds of the tires.”

In most cases, we'll have something like *broken* in place of R_i .

- (27) a. $\llbracket \textit{broken} \rrbracket = \lambda x.\lambda e.\textit{broken}(x, e)$
 b. $\llbracket \textit{the glass is broken} \rrbracket =$
 $\exists e, e': \textit{broken}(\textit{the.glass}', e') \wedge \textit{CAUSE}(e, e')$

- = “Something caused the glass to enter a broken state.”

Suppose *by itself* introduces negative existential quantification over e :

- (28) $\llbracket \textit{by itself} \rrbracket = \lambda f_{\langle s, t \rangle}.\neg \exists e:f(e)$

- This explains why it cannot occur with the resultative passive, despite its being causative: *by itself* would contradict the contribution of \textit{Asp}_R .
- The prior causing event e can still be an event of the glass breaking “by itself”—the prior event has no cause, but the prior event itself did cause the glass to enter a broken state.

5. Resultative Passives of Unaccusatives

The present account predicts that causative but non-agentive verbs should productively form resultative passives. Such verbs are the class of unaccusative internally-caused change-of-state verbs (henceforth CoS verbs) (Levin & Rappaport Hovav 1995; McKoon & Macfarland 2000).

McIntyre (2013) and Gese et al. (2011) note that resultative passives can occur with some unaccusative verbs.

- McIntyre (2013) asserts that the relevant class of unaccusatives are those that express a “salient, relatively stable” result state.

- Gese et al. (2011) attribute this to pragmatic factors.
- I focus on McIntyre’s data, since Gese et al. are working with German. There is evidence that the structure of resultative passives may vary considerably across languages (Alexiadou et al. 2015), and I am presently only focused on English.

Recall our diagnostics for causativity that can be applied to unaccusative verbs: *by itself* licensing, and disallowing *there*-insertion.

- (29) a. The vase broke by itself.
 b. * There broke a vase on the table.
- (30) a. # The letter arrived by itself. (Okay under an *alone* reading.)
 b. There arrived a letter in the mail.

Break passes the tests for causativity, and *arrive* does not—which correlates with their ability to form resultative passives.

- (31) a. The vase seems (un)broke.
 b. * The letter seems (un)arrived.

These tests also work for non-alternating unaccusatives:

- (32) a. The log decayed.
 b. ?* The humid weather decayed the log.
 c. The log decayed by itself.
 d. * There decayed a log in the forest.
 e. The log seems (un)decayed.
- (33) a. The letter arrived.
 b. * The delivery person arrived the letter.
 c. # The letter arrived by itself.
 d. There arrived a letter in the mail.
 e. * The letter seems (un)arrived.

Other verbs like *arrive* include *stand*, *appear*, *run*, etc.

Some unaccusative verbs are ambiguous between an existential and an eventive/causative reading (Deal 2009). These only allow a causative reading with a resultative passive.

- (34) *grow*: Existential
- a. There grew some corn in our garden last year.
(Deal 2009, 19a)
 - b. # The corn grew by itself in our garden last year.
- (35) *grow*: Eventive/Causative
- a. * There grew some corn very slowly in Massachusetts.
(Deal 2009, 19b)
 - b. The corn grew very slowly in Massachusetts by itself.
- (36) The corn seems grown. =
- a. * It seems the corn is currently growing. (= Existential)
 - b. ✓ The corn seems to be in a state of having (been) grown.
(= Eventive/Causative)

McIntyre (2013)'s examples of resultative unaccusative participles either pass diagnostics for causativity, involve resultative secondary predicates that would license v_{CAUSE} , or fail the causativity tests due to their encyclopedic meanings.

- (37) *Pass Diagnostics for Causativity*
lapsed/returned/vanished people, deteriorated/decayed/capsized/rusted boat, wilted/faded flower, unerupted volcano, expired/elapsed license, stuck window, hatched chicken, swollen/bloated hand, collapsed building
- (38) *Resultative Secondary Predicates*
backslidden people, flown-away bird, run-out license, fallen-over/caved-in building
- (39) *Exceptions Due to Encyclopedic Knowledge*
rested/failed/Dutch-descended/retired people, defected spies

Among the exceptions, for example, *defect* disallows both *by itself* and *there*-insertion. Presumably, this is because we know that spies must choose to defect; it's not something that can "just happen."

McIntyre (2013)'s claim that a relatively stable result state is required is cast into doubt when considering that the result state need not be stable in any particular case.

- (40)
- a. The log seems partially decayed.
 - b. The flower seems half-wilted.
 - c. The rock seems somewhat eroded.

While the participles can describe a stable result state, they aren't doing so in these examples.

- If this restriction is semantic or pragmatic, its unclear why these should be allowed.
- If it is syntactic, then the explanation is the same as the present account: these verbs have SC predicates that encode a result state.

One more concern to address is raised in McKoon & Macfarland (2000), whose corpus study of CoS verbs shows that some of these occur in transitive uses. Perhaps resultative passives of CoS verbs are derived from their transitive uses.

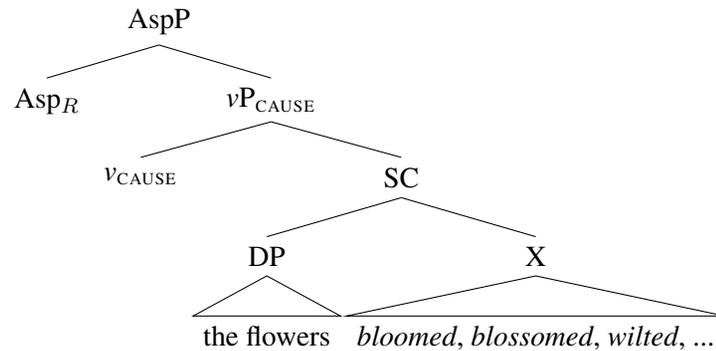
However, some CoS verbs in their search have a < 0.1 probability of occurring in a transitive use, and some have a 0 probability of this. Such verbs are nevertheless fully productive with resultative passives:

- (41)
- a. The roses seem { (un)bloomed / (un)blossomed / (un)wilted }.
 - b. The log seems { (un)decayed / (un)rotted }.
 - c. His health seems (un)deteriorated.
 - d. The bush seems (un)flowered.
 - e. The seed seems (un)germinated.
 - f. ...energy consumption seems stagnated within the EU...³

³<https://books.google.com/books?isbn=1317128141>

Since these verbs rarely/never occur in transitive uses, it's unlikely that the resultative passive is derived from a transitive use. Instead, I propose they have the following structure:

(42)



6. Conclusion

Examining the structure of resultative passives, I showed...

- ...evidence that the possible readings of resultative passives support or are compatible with a causative analysis, though the range of possible causers is subject to restrictions based on encyclopedic knowledge of kinds of events.
- ...a semantics and syntax that can account for the restrictions on readings of the resultative passive in a unified way.
- ...that unaccusative verbs that pass diagnostics for causativity can productively form resultative passives, while those that fail such diagnostics cannot.

Taken together, these data support an analysis of the resultative passive as causative.

References

- Alexiadou, A., Anagnostopoulou, E., & Schäfer, F. (2015). *External Arguments in Transitivity Alternations: A Layering Approach*. Oxford, United Kingdom: Oxford University Press.
- Alexiadou, A., Gehrke, B., & Schäfer, F. (2014). The argument structure of adjectival participles revisited. *Lingua*, 149, 118–138.
- Anagnostopoulou, E. (2003). Participles and Voice. In A. Alexiadou, M. Rathert, & A. von Stechow (Eds.) *Perfect Explorations*, (pp. 1–36). Boston, Massachusetts and Berlin, Germany: Mouton de Gruyter.
- Anagnostopoulou, E. (2013). Little v, Voice, and phases in participles. Unpublished Handout.
- Baker, M., Johnson, K., & Roberts, I. (1989). Passive arguments raised. *Linguistic Inquiry*, 20:2, 219–251.
- Bruening, B. (2014). Word formation is syntactic: Adjectival passives in English. *Natural Language and Linguistic Theory*, (pp. 363–422).
- Deal, A. R. (2009). The origin and content of expletives: Evidence from “selection”. *Syntax*, 12:4, 285–323.
- Embick, D. (2004). On the structure of resultative participles in English. *Linguistic Inquiry*, 35:3, 355–392.
- Folli, R., & Harley, H. (2005). Flavours of v: Consuming results in Italian and English. In P. Kempchinsky, & R. Slabakova (Eds.) *Aspectual Enquiries*, (pp. 95–120). Dordrecht, The Netherlands: Springer.
- Gehrke, B. (2015). Adjectival participles, event kind modification, and pseudo-incorporation. *Natural Language and Linguistic Theory*, 33:3, 897–938.
- Gese, H., Maienborn, C., & Stolterfoht, B. (2011). Adjectival conversion of unaccusatives in German. *Journal of Germanic Linguistics*, 23:2, 101–140.
- Koontz-Garboden, A. (2009). *States, Changes of State, and the Monotonicity Hypothesis*. Ph.D. thesis, Stanford University.

- Levin, B. (2009). Further exploration of the landscape of causation: Comments on Alexiadou and Anagnostopoulou. In C. Halpert, J. Hartman, & D. Hill (Eds.) *Proceedings of the 2007 Workshop in Greek Syntax and Semantics at MIT*, vol. 57. Cambridge, Massachusetts: MIT Working Papers in Linguistics.
- Levin, B., & Rappaport Hovav, M. (1995). *Unaccusativity: At the Syntax-Lexical Semantics Interface*. Cambridge, Massachusetts: MIT Press.
- Maienborn, C. (2009). Building event-based *ad hoc* properties: On the interpretation of adjectival passives. In A. Riester, & T. Solstad (Eds.) *Proceedings of Sinn und Bedeutung 13*, (pp. 31–45).
- McIntyre, A. (2013). Adjectival passives and adjectival participles in English. In A. Alexiadou, & F. Schäfer (Eds.) *Non-Canonical Passives*, (pp. 21–41). John Benjamins.
- McKoon, G., & Macfarland, T. (2000). Externally and internally caused change of state verbs. *Language*, 76:4, 833–858.
- Meltzer-Asscher, A. (2012). Verbal passives in English and Hebrew: A comparative study. In M. Everaert, M. Marelj, & T. Siloni (Eds.) *The Theta System: Argument Structure at the Interface*. Oxford, United Kingdom: Oxford University Press.
- Partee, B. (1983/1997). Uniformity vs. versatility: The genitive, a case study. In J. van Benthem, & A. ter Meulen (Eds.) *The Handbook of Logic and Language*, (pp. 464–470). Elsevier.
- Pylkkänen, L. (2002). *Introducing Arguments*. Ph.D. thesis, MIT.
- Pylkkänen, L. (2008). *Introducing Arguments*. Cambridge, Massachusetts: MIT Press.
- Schäfer, F. (2012a). The passive of reflexive verbs and its implication for theories of binding and case. *Journal of Comparative Germanic Linguistics*, 15:3, 213–268.
- Schäfer, F. (2012b). Two types of external argument licensing – the case of causers. *Studia Linguistica*, 66:2, 128–180.
- Wasow, T. (1977). Transformations and the lexicon. In P. Culicover, T. Wasow, & J. Bresnan (Eds.) *Formal Syntax*, (pp. 327–360). New York, New York: Academic Press.