Causative VP-omission, Agency, and Null Complement Anaphora in English

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Abstract: In English, the causation verbs *make* and *let* allow their following VP to be omitted; e.g. *I made/let Chris play the drums before I made/let Sam (play the drums).* We show that such 'causative VP-omission' involves Null Complement Anaphora rather than predicate ellipsis, and for most speakers requires an agentive causee. Examination of aspectual verbs suggests that the agent restriction extends to Null Complement Anaphora in general.

Keywords: causatives, Null Complement Anaphora, ellipsis, agency, aspectual verbs

1 Introduction

In English, the causation verbs *make* and *let* can take [DP + uninflected VP] complements (Mittwoch 1990; Ritter and Rosen 1993, 1997). As parenthesised in (1), both allow the VP to omitted:[1]

(1)   a.   First I made Chris apologise, then I made Sam (apologise).
      b.   First I let Chris play outside, then I let Sam (play outside).

We make two main empirical contributions regarding 'causative VP-omission'. First, causative VP-omission involves Null Complement Anaphora (NCA) rather than predicate ellipsis (section 2). Second, the thematic role of the causee is more restricted with causative VP-omission than when the VP is present, in that for most speakers it must be an agent (section 3). Our analysis of causative VP-omission as NCA explains why internal argument non-agents are mostly impossible – the atomic null pro-form of NCA does not provide a base position. The ban on non-agent external arguments can be formally implemented via selection, but is otherwise stipulated. Still, examination of aspectual verbs suggests that the agent restriction regulates NCA quite generally (section 4). Section 5 concludes.

Unless otherwise stated, the judgments come from the authors, who are native speakers of British English. The principal claims of section 3, regarding the thematic role of the causee, are supported by an acceptability judgment survey described in section 3.1 and documented in the Appendix.

2 Causative VP-omission is Null Complement Anaphora

This section argues that causative VP-omission is an instance of Null Complement Anaphora (NCA) rather than predicate ellipsis (a.k.a VP ellipsis). We thus identify causative VP-omission as 'deep' rather than 'surface' anaphora (Hankamer and Sag 1976).

Example (2) contrasts typical examples of predicate ellipsis (a) and NCA (b). We notate the ellipsis site with a ~~strikethrough~~ and the NCA site with a 'Ø', in keeping with the analysis that ellipsis involves silenced syntactic structure (e.g. Merchant 2001), while NCA involves a null pro-form (e.g. Depiante 2000):

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[1]Example (1) et seq. counterexemplify previous claims that such VP-omission is unacceptable in English (van Craenenbroeck 2017: ex. 59h, Lobeck 1995:48).

(2)   I asked Mary to give her toys away, but ...

    a.   she refused to ~~give them away~~.

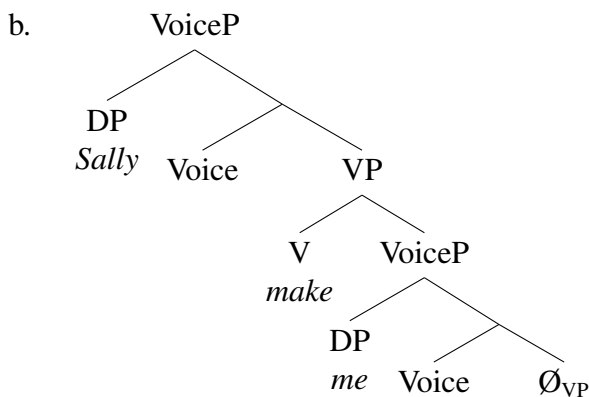   b.   she refused Ø.   Ø = to give them away

As evidence for our claim, we will show that causative VP-omission patterns with NCA, and not with predicate ellipsis, on three key diagnostics: A'-movement (section 2.1), categorial restrictions (section 2.2), and non-linguistic antecedents (section 2.3). The rest of the section then provides more direct evidence that causative VP-omission and NCA involve a null pro-form (section 2.4) and that licensing of Ø is a lexical matter (section 2.5).

For concreteness, (4) pairs an example of causative VP-omission (a) with the structure that we will defend for the maximal VoiceP constituent containing it (b):[2]

(4)   a.   I chopped the wood, because Sally made me Ø.   Ø = chop the wood

    b.

2.1   A'-movement

A'-movement is possible out of predicate ellipsis (Lappin 1984, Haïk 1987, Johnson 2001, Merchant 2013) but not NCA (Depiante 2000:12, Depiante 2019:665). As illustrated in (5), the internal structure of predicate ellipsis (a) allows the base position of A'-movement to be represented, where the atomic pro-form of NCA (b) does not:

(5)   I remember what Mary was willing to give away *t*, but I don't remember ...

    a.   what she refused to ~~give away *t*~~.

    b.   *what she refused Ø.

Causative VP-omission patterns with NCA in disallowing A'-movement. In (6), interrogative *wh*-movement is impossible out of the omitted VP:

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[2]A complete syntactic analysis of *make/let*-type causation verbs is likely to require raising-to-object. In (4-b), the causee is base-generated in Spec-VoiceP. This cannot be the case with the derived causees in (3), however, proving the need for a position between *make/let* and the lower verb to which DPs can A-move (Ritter and Rosen 1993):

(3)   a.   We could make [the train arrive *t* late].   (unaccusative)

    b.   We could make [our handout read *t* more smoothly].   (dispositional middle)

    c.   We could make [there appear *t* to remain just one thing on the to-do list].   (raising verb)

    d.   We could make [the monument be seen *t* more easily].   (passive)

Following Sheehan and Cyrino (2023: sect. 3.3) we suggest that the derived position is the raising-to-object position, Spec-VP. In section 3 we explain why the configurations in (3) are incompatible with causative VP-omission for most speakers.

(6) a. I remember what Mary was willing to give away *t*,
          *but I don't remember what Bill made her Ø.
     b. Whose dessert did Mary make John eat *t*?
          *And whose did she make Bill Ø?

The same goes for other overt A'-movements (11) – relativisation (a), clefting (b) and topi-calisation (c) are all impossible with causative VP-omission:[3]

(11) a. *Mary gives every lecture that the department makes her Ø.
      b. *It's chocolate that they'll let you eat; it's sprouts that they'll make you Ø!
      c. *Chocolate, they let me eat; sprouts, they have to make me Ø.

Covert A'-movement points to the same conclusion. The sentences in (12) serve as a baseline, since no covert movement is required to derive the surface scope reading of each sentence. In (13), however, an inverse scope reading can be derived via Quantifer Raising out of predicate ellipsis (a) but not NCA (b) (Depiante 2000, 2019). Causative VP-omission (c) again patterns with NCA:

(12) *Baseline, surface scope context*:
      A keen new doctor and a keen new nurse have just joined the ward. So...
      some doctor volunteered to visit every patient, and some nurse...

      a. ...did ~~volunteer to visit every patient~~, too.   (predicate ellipsis)
      b. ...volunteered Ø, too.   (NCA)
      c. ...made the radiographer Ø, too.   (causative VP-omission)

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[3]While *make*-causatives freely allow A-bar movement of the causee (7), Ka-Fai Yip observes that such movement is often degraded when combined with causative VP-omission (8):

(7) a. Who did Mary make *t* eat their vegetables?
     b. John was the person [who I had to make *t* eat his vegetables].

(8) a. Who did Mary make *t* eat their vegetables?
          *And who did you make *t* Ø$_{VP}$?
     b. I remember I made John/someone issue an apology.
          *But I can't remember who you made *t* Ø$_{VP}$.

However, A-bar movement of the causee is in principle possible with causative VP-omission so long as there is contrastive FOCUS on *make*, as licensed in (9) by opposition with *leave* (a) and *let* (b):

(9) a. Which of the kids can you just leave *t* to eat their vegetables?
          And which ones do you have to MAKE *t* Ø?
     b. Mary, you can simply let *t* eat her vegetables; it's John you have to MAKE *t* Ø.

We also note that NCA is generally compatible with A-bar movement of indirect objects which intervene between the verb and null pro-form (10):

(10) a. I promised John the fight was fixed. Who did you promise *t* Ø?
      b. Why does everyone know I'm leaving? I need to know who you told *t* Ø.

In sum, it seems that causative VP-omission is felicitous only in specific information-structural circumstances; namely where the omitted material is recoverable, but the causation verb and/or the causee are not. With this paper, we aim to account for how causative VP-omission is possible at all, leaving a detailed investigation of these further information-structural conditions for future research.

(13)   *Inverse scope context*:
         Each patient needed to be seen by some doctor or other, and by some other medic.
         So fortunately, some doctor volunteered to visit every patient, and some nurse...

         a.   ...did ~~volunteer to visit [every patient]~~$_{QR}$, too.   (predicate ellipsis)
         b.   *...volunteered Ø, too.   (*NCA)
         c.   *...made the radiographer Ø, too.   (*causative VP-omission)

2.2   Categorial restrictions

First, note that the target of predicate ellipsis is not restricted by category. As (14) shows, not
only VP but also AdjP, DP and PP predicates can be elided:

(14)   Mary is [$_{VP}$ crying] / [$_{AdjP}$ teary] / [$_{DP}$ a star] / [$_{PP}$ in DC], and
         John is ~~[$_{VP}$ crying]~~ / ~~[$_{AdjP}$ teary]~~ / ~~[$_{DP}$ a star]~~ / ~~[$_{PP}$ in DC]~~, too.

     NCA, however, generally is restricted by category (Haynie 2010). In (15), *try* permits NCA
of non-finite CP complements (a) but not of DP complements (b). Similarly in (16), *agree*
permits NCA of finite CP complements (a) but not PP complements (b):

(15)   a.   John wasn't good enough [$_{CP}$ to win], but at least he tried Ø$_{CP}$.
         b.   *John wasn't a fan of [$_{DP}$ the soup], but at least he tried Ø$_{DP}$.

(16)   a.   It was suggested [$_{CP}$ that we should leave], and I agreed Ø$_{CP}$.
         b.   *There was much disquiet [$_{PP}$ with the decision], but I agreed Ø$_{PP}$.

     Causative VP-omission patterns with NCA in being restricted by category. Causative *make*
combines with predicates of many categories, as shown in the first halves of (17); but as shown
by the second halves, only VP complements can be omitted:

(17)   a.   Mary made John [$_{VP}$ audition],   and his agent made him Ø$_{VP}$, too.
         b.   *Up* made John [$_{AdjP}$ teary],   *then *Toy Story* made him Ø$_{AdjP}$, too.
         c.   Mary made John [$_{DP}$ a star],   *and his agent made him Ø$_{DP}$, too.
         d.   Mary made John [$_{PP}$ into a star], *and his agent made him Ø$_{PP}$, too.

2.3   Non-linguistic antecedents

To set up the third diagnostic, consider that with an explicit linguistic antecedent (18), predicate
ellipsis (a), NCA (b) and causative VP-omission (c) are equally possible:

(18)   The teacher asked John to write on the board...
         a.   ...but he refused to ~~write on the board~~.
         b.   ...but he refused Ø$_{NCA}$.   Ø$_{NCA}$ = to write on the board
         c.   ...but she couldn't make him Ø$_{VPO}$.   Ø$_{VPO}$ = write on the board
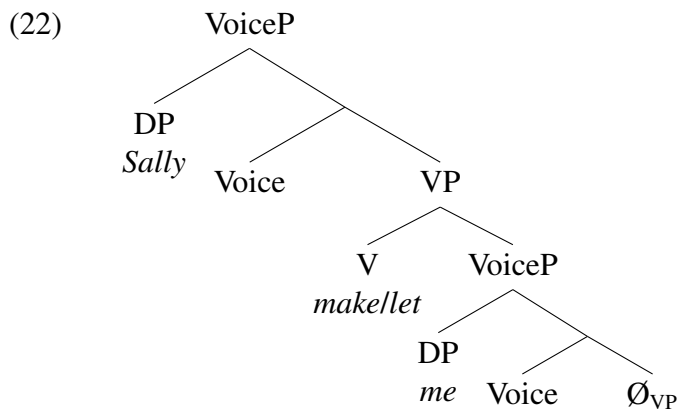
     Without an explicit linguistic antecedent, however, deep and surface anaphora come apart
(Hankamer and Sag 1976). The scenario in (19) provides a non-linguistic antecedent that is
sufficient for NCA (b) but not predicate ellipsis (a). Causative VP-omission (c) patterns with
NCA in being able to draw on the non-linguistic context for its antecedent:

(19)   (The teacher has been writing on the board, then turns and proffers the chalk to John. A classmate says to their neighbour:)

    a. ??I bet he'll refuse to ~~write on the board~~.

    b. I bet he'll refuse $\emptyset_{\text{NCA}}$. $\emptyset_{\text{NCA}}$ = to write on the board

    c. She can't make him $\emptyset_{\text{VPO}}$. $\emptyset_{\text{VPO}}$ = write on the board

In sum, based on the sufficiency of non-linguistic antecedents, the categorial restriction to VP, and the evidence from A'-movement, we conclude that causative VP-omission is best analysed as a kind of NCA, not predicate ellipsis.[4] The following two subsections discuss the null pro-form of NCA and causative VP-omission, providing more direct evidence that it is the correct analysis and arguing that it is licensed lexically.

2.4   NCA involves a pro-form

Adapting the pro-form analysis of NCA (Hankamer and Sag 1976, Depiante 2000, Haynie 2010) to causative VP-omission yields (22), repeated from (4-b):

(22)

In this subsection, we argue against an alternative analysis of causative VP-omission – one based in turn on an alternative analysis of NCA.

Alongside the null pro-form approach, NCA has been analysed as plain intransitivity (Shopen 1972, Grimshaw 1979, Napoli 1983), as schematized in (23). On this view, anaphora is mediated semantico-pragmatically, without null pro-forms in the syntax:
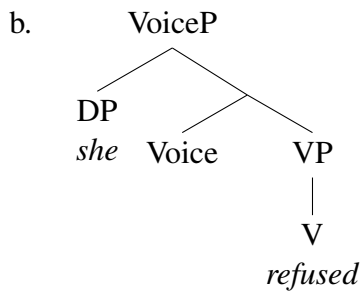
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[4]It is of course possible for the causation verb to be elided when part of a larger constituent undergoing predicate ellipsis, licensed by T (see Lobeck 1995, Aelbrecht 2010). This can be diagnosed by A'-movement:

(20)   I remember what Mary made me eat *t*, and what JOHN did ~~make me eat *t*~~, too.
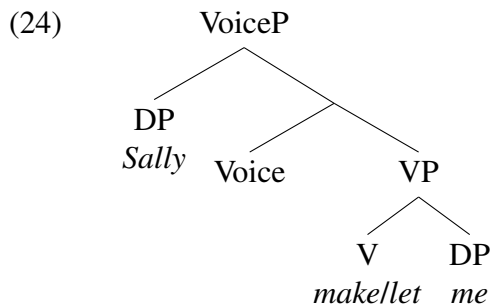
Predicate ellipsis can also be induced below *make* (21), since constituent negation (a) and auxiliaries (b) independently license predicate ellipsis (Williams 1994, Potsdam 1997):

(21)   a. I remember what Mary made me eat *t*, and what she made me **NOT** ~~eat *t*~~.

    b. In my screenplay, I remember which monster I let Ed be eaten by *t*.

       ?I just can't remember which monster I let Mary **be** ~~eaten by *t*~~.

(23) a. I asked Mary to give her toys away, but she refused.

b.
```
              VoiceP
             /      \
          DP         \
          she    Voice   VP
                         |
                         V
                       refused
```

For causative VP-omission, a parallel analysis would take the causative verb to be a 'plain transitive' with no further complement, as in (24):

(24)
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              VoiceP
             /      \
          DP         \
         Sally   Voice    VP
                         /   \
                        V     DP
                     make/let  me
```

However, a plain transitive analysis of causative VP-omission faces two difficult problems. First, *make* and *let*, when combined with causative VP-omission, have different meanings from their simple transitive counterparts. Simple transitive *make* is not a bieventive causative: "*I made a band*" (in an out-of-the-blue context) means only that you created one, not that you made it do something. Meanwhile the simple transitive counterpart of *let* means 'lease' (at least in British English); e.g. "*They let grotty flats.*"

A second problem is that *make/let* with VP-omission is structurally like *make/let*+VP and not like simple transitive *make/let*. This is evident with respect to passivisation in (25): *make*+VP resists passivisation (a) (Sheehan and Cyrino 2023), and continues to do so with causative VP-omission (b):

(25) a. *I didn't want to eat the haggis, but I was made eat the haggis (by my hosts).
      b. *I didn't want to eat the haggis, but I was made Ø$_{VP}$ (by my hosts).

By contrast, simple transitive *make* happily passivizes (26):

(26) A cake was made for the occasion.

The same contrast holds of *let* (27): *let*+VP resists passivisation (a) and continues to do so with causative VP-omission (b),[5] whereas simple transitive *let* can passivize (c):

(27) a. *I was let keep my old phone.
      b. *If you want to keep your old phone, you will be let Ø$_{VP}$.
      c. That grotty flat was let for £2,000 per month.

With a plain transitive analysis of causative VP-omission facing these problems, we maintain the pro-form analysis in (22).

Still, a plain transitive analysis seems accurate in nearby circumstances. Like *make/let*,

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[5]We thank an anonymous reviewer for this point.

perception verbs take [DP + uninflected VP] complements (28):

(28)   I saw/heard/watched/smelt/felt/witnessed [Chris eat the last sandwich].

However, these verbs do not license VP-omission. Consider (29). B's response reads as a contradiction – if B was watching the suspect all day, then B must have seen him. Had it been possible to interpret the silence after *see him* as *leave the house*, then B's response would not be contradictory – B could well not have seen the suspect leave the house despite watching him all day:[6]

(29)   A: Did the suspect leave the house?
        B: #I didn't **see** him, even though I was watching him all day.

Thus VP-omission is not available with *see*. Likewise in (30), B's response is contradictory, but would not have been were we able to interpret an omitted VP:

(30)   A: Did Mary hear John go to the loo at 3am?
        B: #She didn't **hear** him, although she was listening to him snore all night.

Thus again we conclude that VP-omission is not available. Instead, (29) and (30) can only involve plain transitive uses of *see* and *hear*.

A plain transitive analysis also seems appropriate for *help*. In (32), an election loss is 'helped' into being, and although the DP following *help* (*him*, i.e. Corbyn) does not benefit from this, there is no contradiction in (a). But (b), which features a simple DP complement to *help*, is contradictory. If it was possible to interpret the silence after *helped him* as *lose the election*, then (b) would be just as felicitous as (a). We take this to show that there is no silent verbal material in (b):[7]

(32)   A poor Brexit strategy helped Corbyn lose the election.
        a.   A lacklustre campaign launch helped him lose, as well.
        b.   #A lacklustre campaign launch helped him, as well.

Thus, while *make/let* license causative VP-omission, there is no corresponding 'perceptive VP-omission' licensed by *see/hear*, nor 'facilitative VP-omission' licensed by *help*. The next subsection argues that such idiosyncrasy is to be expected, since the licensing of causative VP-omission and NCA is a lexical matter.

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[6]A reviewer disputes this judgment. This is interesting, since the existence of speaker variation here suggests that the incompatibility between perception verbs and VP-omission is an accidental selectional property of particular (classes of) verbs rather than a 'deep' fact about VP-omission. This mirrors what we know about the lexical specificity of NCA in general, as discussed in the next subsection.

[7]This contrasts with intransitive *help*, which does appear to license NCA (31):

(31)   A poor Brexit strategy helped Corbyn lose the election.
        A lacklustre campaign launch helped Ø, as well.   Ø = Corbyn lose the election

2.5 Lexical licensing

In the structure in (22), we propose that the null pro-form $\emptyset_{VP}$ is licensed by *make/let*.[8] The differences at the end of the previous subsection between *make/let* on the one hand and *see/hear/help* on the other are a first step towards justifying the lexically-specific nature of this relationship: as a lexical matter, *make/let* can license $\emptyset_{VP}$, but *see/hear/help* cannot.

Furthermore, this selectivity fits with what is known about NCA in general. NCA is found in the complement of lexical heads, apparently arbitrarily (Depiante 2019:670ff.).[9] For example, in (33), *try* licenses NCA, but the semantically similar *attempt* does not:

(33)   a.   I couldn't finish it, but at least I tried $\emptyset$.
          b.   *I couldn't finish it, but at least I attempted $\emptyset$.

Indeed, within the realm of causatives that take [DP + uninflected VP] complements, we can see that licensing of causative VP-omission is lexically specific by considering *have* (34). While causative *make/let* license causative VP-omission (a), causative *have* does not (b):

(34)   a.   First I made/let Chris pet the tarantula, then I made/let Sam (pet the tarantula).
          b.   First I had Chris do my bidding, then I had Sam *(do my bidding).

To summarise this section, A'-movement, non-linguistic antecedents and the restriction to VP show that causative VP-omission is a species of NCA, which involves a null pro-form and is lexically licensed. The rest of this *Remark* turns to the thematic requirements of causative VP-omission (section 3) and NCA more generally (section 4).

3 VP-omission requires an agentive causee

In all our good examples of causative VP-omission so far, repeated in (35), the causee was an agent:

(35)   a.   First I made Chris eat dinner, then I made Sam $\emptyset_{VP}$.   (= 1a)
          b.   First I let Chris play outside, then I let Sam $\emptyset_{VP}$.   (= 1b)
          c.   I chopped the wood, because Sally made me $\emptyset_{VP}$.   (= 4-a)
          d.   Mary made John audition, and his agent made him $\emptyset_{VP}$, too.   (= 17a)
          e.   First I made/let Chris pet the tarantula, then I made/let Sam $\emptyset_{VP}$.   (= 34a)

This section argues that such agentivity is required, in that causative VP-omission is unacceptable with non-agent causees (for most speakers).[10] We begin by describing an acceptability

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[8]We remain agnostic on the exact nature of this licensing relation, noting only that it cannot be classical local selection, since $\emptyset_{VP}$ is not in the complement of *make/let*. 'Nearly-local' selection, by which a selecting head can 'see through' an argument-introducing head A to select the complement of A, has been argued to be a necessary part of selection—see Bruening (2021:1061).

[9]Compare ellipsis, which is found exclusively in the complement of functional heads (Lobeck 1995): C for sluicing, T for predicate ellipsis, D for noun phrase ellipsis, etc. This lexical vs. functional divide could be definitional of NCA vs. ellipsis.

[10]Mittwoch (1990:113) makes a related but different claim. She states that with causative VP-omission, the caus*er* must be an agent. The examples in (36) do not seem overly degraded to us, however; further work is required:

(36)   a.   ?Self-belief made Carol practice every day. A strong work ethic made Emily $\emptyset_{VP}$.
          b.   ?Perfectionism makes Tom resubmit his work. But only a bad grade will make David $\emptyset_{VP}$.

judgment survey whose results support our claim (section 3.1). We then explain how our proposed structure in (22) successfully accounts for why internal argument causees are incompatible with causative VP-omission (section 3.2). Finally, we discuss how causative VP-omission remains incompatible with non-agent causees that are nonetheless still external arguments (section 3.3). We suggest that this may reflect a general restriction on NCA, as discussed further with respect to aspectual verbs in section 4.

3.1 Acceptability judgment survey

Based on our own judgments, we hypothesised that causative VP-omission is unavailable where the causee position is occupied by a non-agent. The class of non-agents includes internal arguments and non-agent external arguments.

To test the generality of these judgments, we ran an acceptability judgement survey of 38 native speakers of English, all with some training in linguistics and recruited via our professional networks. We constructed the survey to measure the difference between minimally paired sentences with and without causative VP-omission. To equalise (non-)redundancy, we used predicate ellipsis for the baseline sentences without VP-omission. To test the acceptability of internal argument causees, we embedded unaccusatives under *make*; and to test non-agent external argument causees, we embedded transitives with cause subjects under *make*.[11] This amounted to a 2x3 design, where the first factor was Silence Type – (i) Predicate Ellipsis (PE) vs. (ii) VP-omission (VPO); while the second factor was Causee Type – (a) Agent vs. (b) Internal Argument (IA) vs. (c) Cause. Participants were tasked with rating sentences on a 1-7 Likert scale. An example paradigm is given in (37):

(37)   a.   We successfully made Pierre melt the chocolate, ...   (Agent)
            (i)   ... but we couldn't get Sally to.   (Agent-PE)
            (ii)   ... but we couldn't make Sally.   (Agent-VPO)
    b.   We successfully made the butter melt from the heat, ...   (Internal Argument)
            (i)   ... but we couldn't get the chocolate to.   (IA-PE)
            (ii)   ... but we couldn't make the chocolate.   (IA-VPO)
    c.   We successfully made a high heat melt the chocolate, ...   (Cause)
            (i)   ... but we couldn't get a low heat to.   (Cause-PE)
            (ii)   ... but we couldn't make a low heat.   (Cause-VPO)

We hypothesized that the difference between Predicate Ellipsis (i) and VP-omission (ii) would be greater with Internal Arguments (b) and Causes (c) than with Agents (a).

We created four sets of six test sentences like the one in (37). Each set manipulated a verb that participates in the causative alternation – *melt* here, *crack*, *freeze* and *slam* in the full list of test sentences given in the Appendix. Every participant saw every target sentence along with six grammatical and six ungrammatical fillers for a total of 36 sentences to be judged. Additionally, the first clause of every test sentence included a 'hedge' of some kind (e.g. *successfully*, *managed to*) as we found that these improved our own judgments across the board, perhaps by facilitating a more plausible context. All the (b) sentences with Internal Argument causees featured either a *from*-PP (e.g. *melt from the heat*) or a resultative secondary predicate (e.g. *freeze solid*) to force an unaccusative construal.

One confound was impossible to eliminate: the IA-VPO (bii) and Cause-VPO (cii) conditions both have alternative readings in which *make* + DP is interpreted as a simple transitive;

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[11]We understand 'cause' similarly to Folli and Harley (2005) – an argument that is construed as an event, in a causal relation to the verbal event.

e.g. *make the chocolate*, *make a low heat*. We mitigated this confound as best we could by contrasting a positive first clause with a negative second clause, thereby encouraging semantically parallel interpretations. We also used contrasting, non-pronominal causees, which in our judgment made the simple transitive reading less available. In any case, this confound provides an alternative acceptable reading of these conditions, biasing against our hypothesis that they should perform worse than the Agent-VPO (aii) condition (which lacks this alternative reading). Hence the positive results we describe below cannot be discounted on the basis of this confound.

The results of the survey are presented in Table 1:[12]

Causee Type	Predicate Ellipsis		VP-omission		Difference
	Mean	SD	Mean	SD	in means
Agent	6.30	1.01	4.79	1.77	1.51
Internal Argument	5.95	1.20	3.54	1.70	2.41
Cause	5.58	1.31	2.68	1.30	2.89

Table 1: Survey results

These results confirm our hypothesis: the difference between Predicate Ellipsis and VP-omission is greater with Internal Arguments (2.41) and Causes (2.89) than with Agents (1.51). Two-tailed t-tests showed these differences to be significant: Agent vs. Internal Argument ($p = 0.000076$); Agent vs. Cause ($p = 0.000011$). Notice also that the only two sentence types with mean ratings below the midpoint of 4 are VP-omission with Internal Argument (3.54) and Cause (2.68) causees.

These results support our claim that causative VP-omission generally requires an agentive causee. In addition, there was a significant difference between Internal Argument vs. Cause ($p = 0.016$). The rest of this section considers the results of the survey in more detail, including this unexpected contrast, and discusses the syntax that underlies them.

3.2 Internal arguments

Our survey found that causative VP-omission is judged to be overall less acceptable when the causee is an internal argument than when it is an agent. The structure we posited in (22) explains why internal argument causees are incompatible with causative VP-omission (for most speakers). Internal arguments are generated within VP; but the null VP pro-form '$\emptyset_{VP}$' of causative VP-omission is atomic – it has no internal structure. Thus the syntactic position where internal arguments would be generated does not exist under causative VP-omission.

Through our manipulation of the causative alternation, internal arguments were represented in our survey by subjects of unaccusative verbs. In our judgment, other kinds of internal argument causees are similarly degraded with VP-omission. Across (42)-(45), the internal-argument-hood of the causee is guaranteed by the choice of embedded predicate. In (42) and (43) it is a dispositional middle;[13] in (44) it is a 'sporadic advancement' construction (in the sense of Perlmutter and Postal 1984, Bruening 2013); and in (45) it is a passive. Whereas the (a) sentences with predicate ellipsis are mostly acceptable, the (b) sentences with causative VP-omission are noticeably worse:[14]

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[12]The pattern of results remains the same after transforming the raw data into z-scores – see Appendix.

[13]We assume with Newman (2020) that the subject of a middle is an internal argument, not an external argument.

[14]Causative VP-omission is also generally unacceptable with *let* where the causee is an internal argument:

(42) We made [our new line of shirts wash more easily].

    a. So we can certainly get our line of trousers to.

    b. *So we can certainly make our line of trousers.

(43) The new loophole will make [our corrupt cops bribe even easier].

    a. With any luck, it'll get our corrupt politicians to as well.

    b. *With any luck, it'll make our corrupt politicians as well.

(44) By altering the design, we can make [the new hall seat an extra 200 people].

    a. After an upgrade, we can also get the old hall to.

    b. *After an upgrade, we can also make the old hall.

(45) *Context: John and Mary are authors.*
    John made [all his characters be killed at the end].

    a. Mary just got her villain to be.

    b. *Mary just made her villain.

However, not all speakers share these judgments. In particular, reviewers found examples like (46) to be perfectly acceptable:

(46) a. The guests arrived late, because John made them.

    b. The solution won't freeze solid by itself, you have to make it.

In our view, there are two routes to acceptability for these internal argument causees. One route, with respect to (46a), is coercion. In this example, there is no resultative predicate (cf. '*freeze solid*') or *from*-PP (cf. '*freeze from the cold*') to guarantee that *arrive* is unaccusative. Instead, it can be coerced into having unergative syntax, wherein its subject is merged in the specifier of an agentive VoiceP. This syntax forces the causee to be construed as an agent, leading to the interpretation that the guests arrived late deliberately.

A second route to acceptability, which could apply to either example in (46), involves variation in how the VP pro-form is interpreted. In our survey, a small minority of respondents did not register a contrast between predicate ellipsis and VP-omission with internal argument causees. In the aggregate results, these speakers drive the relatively high standard deviation of

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(38) They let [her previous novel sell for pennies].

    a. So they'll probably also allow her new one to.

    b. ??So they'll probably also let her new one.

(39) By altering the design, we can let [the new hall seat an extra 200 people].

    a. After an upgrade, we can allow the old hall to as well.

    b. ??After an upgrade, we can let the old hall as well.

(40) The attorney was happy to let [that one specific ruling be overturned].

    a. But she didn't want to allow the whole legal framework to be.

    b. ??But she didn't want to let the whole legal framework.

However, as an anonymous reviewer notes, this generalisation does not necessarily hold where the omitted verb is unaccusative. The examples in (41) are from *COCA* (Davies 2008-). We lack an account of why causative VP-omission of an unaccusative verb with *let* should be comparatively acceptable:

(41) a. The approach described in this article works incredibly if you let it.

    b. That won't happen. Not if we don't let it.

1.70 for causative VP-omission with internal arguments,[15] along with the significant difference between VP-omission with internal arguments and causes. We speculate that some speakers have a way of resolving the denotation of the null pro-form involved in VP-omission such that it is compatible with internal arguments. In particular, Bruening (2019) argues that the VP pro-form *do so* replaces a VP that is embedded under Voice, but is nonetheless compatible with unaccusatives and passives (47); not because it can contain a syntactic A-movement trace, but because unaccusative subjects of *do so* can be merged, exceptionally, in Spec-VoiceP:

(47) a. The towels dried, but before they did so, ...   *unaccusative*
      b. ...what is eaten is done so in a controlled and seemingly not pleasurable manner.
          passive

We suggest that speakers who accept VP-omission with internal argument causees permit this syntax not just with overt *do so*, but also with covert $\emptyset_{VP}$.

Even setting aside those speakers who accept internal argument causees with VP-omission, the general inability of $\emptyset_{VP}$ to support internal argument causees does not capture the whole story. Despite Spec-VoiceP being available to house external arguments, non-agent external arguments are also generally incompatible with causative VP-omission.

3.3 External arguments

Following our intuition that non-agent causees are incompatible with causative VP-omission, our survey tested the acceptability of causees with a cause role. The results confirmed that our judgments are widely held. This result is interesting, because while the structural analysis of causative VP-omission as involving an atomic pro-form can account for the unacceptability of internal argument causees, it cannot account for the unacceptability of cause causees, since causes are merged as external arguments (i.e., in Spec-VoiceP). We conclude that causative VP-omission is permitted only with agent causees (for most speakers).[16]

Our results might have been taken to show that causative VP-omission is already degraded with agent causees. For agents, the mean for VP-omission is 1.51 points lower than for predicate ellipsis, with a relatively high standard deviation of 1.77. We suspect that this variation is an artifact of our design. As mentioned above, our items used contrasting causees in an effort to mitigate the availability of simple transitive readings of *make* + DP. However, having non-pronominal, focused DPs in the causee position seems to be less than fully natural given that causative VP-omission with contrasting causees is probably unattested in *COCA* (Davies 2008-); i.e., there are no examples of *made NAME* before punctuation, with the relevant reading. Causative VP-omission is relatively common with non-contrasting agent causees, however. There are many hits for *made PRONOUN* before punctuation with the relevant reading, two of which are given in (49):[17]

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[15]We return to the high standard deviation for causative VP-omission with agents in the next subsection.

[16]The unacceptability of causative VP-omission with cause causees seems to hold with *let* as well as *make*, though this requires more rigorous investigation:

(48)   He let his sickness depress him.

        a.   He's going to allow his temper to as well.
        b.   ??He's going to let his temper as well.

[17]The preference for pronominal causees is an interesting quirk of causative VP-omission which we are unable to explore here.

(49) a. She didn't want to come in today, but I made her.   (*The Night Shift*, 2016)
      b. I had to do it! I didn't want to do it. She made me.   (*Kindergarten Cop*, 1990)

In light of this pattern of attestation, we are convinced that causative VP-omission is grammatical with agent causees, for all speakers.

Furthermore, we are confident that the relevant generalisation concerns agentivity, not animacy. With reference to the paradigm in (37), one might counter that whereas animate Agents (aii) are good with VP-omission, the inanimate Internal Arguments (bii) and Causes (cii) are not. However, an explanation in terms of animacy would fail to account for the significant difference we found between Internal Argument and Cause causees. While we did not initially expect this difference, we interpret it as a sign that causative VP-omission is sensitive to argument structure rather than animacy. We suggested in the previous subsection that some speakers have a way of resolving internal arguments with atomic null pro-forms, as with *do so*. If such a strategy remains unavailable for non-agent external arguments, the significantly worse ratings for Cause causees are explained.

An explanation in terms of animacy would moreover fail to account for further data that in our judgment cut across the agent/animate divide. For one, animate subjects of unaccusatives remain incompatible with causative VP-omission (50):[18]

(50) John cracked from the pressure just as he was about to go on stage.

      a. His overbearing teacher caused him to.
      b. *His overbearing teacher made him.

Also conversely, inanimate subjects that are construed as agents *are* compatible with causative VP-omission (52):[19]

(52) My computer got upset and decided it didn't want to open the files.

      a. And I couldn't force it to.
      b. And I couldn't make it.

We can also consider stative verbs, which do not involve agents. Instead, following the now-standard analysis of Kratzer (1996), stative subjects are external arguments that take on a 'state holder' role. As shown in (54), stative verbs reject causative VP-omission. Note that we employ 'authorial' contexts here. These contexts allow 'timeless' stative predicates to be embedded under causative *make*, without the implication that the causing event initiated the state:[20]

(54) a. In my historical novel, I made the Norman aristocrats know French, but I decided not to make the peasants ??(know French).
      b. In my comic, I decided to make the villain have a big, loving family, but not to make the hero ??(have one).

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[18]See also (43) and (45), above.

[19]A reviewer notes that they find (51) acceptable:

(51) The boards will support the weight if you make them.

We suspect that some speakers may be able to coerce *the boards* into being an agent, with *support* itself then construed as an activity verb rather than a state.

[20]Where this initiation implication does arise, it can have the effect of coercing stative predicates into change-of-state predicates. A reviewer finds (53) acceptable, and we suspect that coercion is at play:

(53) John doesn't like horror movies, but we really need to make him.

Thus causative VP-omission is bad with animate non-agent causees, encompassing animate internal arguments and state holders. In addition, raised animate agents are incompatible with causative VP-omission (55):

(55)   We really wanted to make [our preferred candidate seem *t* to be winning].
        But unfortunately, we could only make one of the backups ??(seem *t* to be).

On our account, (55) is bad for the same reason that causative VP-omission is bad with internal arguments – atomic $\emptyset_{VP}$ does not provide the requisite structure to raise out of.

Overall, we find that animacy fails to predict the availability of causative VP-omission. This is keeping with Folli and Harley (2008), who find that, despite initial appearances, animacy is not a relevant factor in constraining argument structure. We conclude instead that causative VP-omission is generally compatible only with agentive external arguments.

Beyond this agency requirement, there do not seem to be any further restrictions on the interpretation of the null pro-form of VP-omission. As shown in (56), $\emptyset_{VP}$ is compatible with various aspectual manipulations. It may be punctual (a) or non-punctual (b); it may be telicly bounded (b) or atelic (c); and it need not involve a change of state (d):

(56)   a.   I didn't want to enter the property without permission. He made me $\emptyset_{VP}$!
        b.   I didn't want to drink the beer without permission. He made me $\emptyset_{VP}$!
        c.   I didn't want to drink beer without permission. He made me $\emptyset_{VP}$!
        d.   She'll only be able to sneeze spontaneously. You can't make her $\emptyset_{VP}$.

This agentivity restriction can be implemented selectionally; with reference to the structure in (22), we can stipulate that only agentive Voice can select $\emptyset_{VP}$.[21] While this does not amount to an explanation, the next section contributes the further empirical observation that the agentivity restriction might apply to NCA quite generally.

4   NCA with aspectual verbs

The previous section observed an agentivity restriction on causative VP-omission, which section 2 identified as a species of NCA. In this section, we use aspectual verbs to argue that the agent restriction is a fact about NCA in general, rather than just a quirk of causative VP-omission.

We start from the observation that a great many NCA-licensing predicates require agent

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[21]We note that there are precedents for thematic requirements being imposed by syntactic configurations involving Voice (Folli and Harley 2005). More immediately apparent are thematic requirements imposed lexically by predicates. In (57), for example, *murder* requires an agent (a), where *kill* does not (b). *The illness* here is not an agent but a cause, and is thus incapable of saturating the external argument role of *murder*:

(57)   a.   The journalist/*The illness murdered the politician.
        b.   The journalist/The illness killed the politician.

But in other cases, agency requirements arise not directly from the lexical verb, but through the configuration of the lexical verb and the syntactic structure in which it is inserted. In (58), for example, *chew* with a theme complement requires an agent subject (a vs. b); whereas *chew* with a small clause complement (DP + *to a pulp*) allows an agent or cause subject (c, d):

(58)   a.   The student chewed [θ the toffee].   *agent*
        b.   *The washing machine chewed [θ the clothes].   *cause*
        c.   The student chewed [SC the toffee to a pulp].   *agent*
        d.   The washing machine chewed [SC the clothes to a pulp].   *cause*

subjects; for example, *volunteer* and *try* (59):

(59) a. Chris couldn't move the boulder, so Sam volunteered/tried Ø.
      b. *Chris couldn't move the boulder, so/but the wind volunteered/tried Ø.

This agent restriction is perhaps an 'unremarkable' property of these particular lexical items (along the same lines as *murder* vs. *kill* in note 21).

The requirement for agent subjects is more striking with aspectual verbs like *start*. These verbs can license NCA (60) and, separately, allow non-agent subjects (61):

(60) Abby finished writing her essay before Beth had even started Ø.

(61) a. There started appearing essays that discussed previously-taboo topics.
      b. Now the shit has really started hitting the fan.

Crucially, however, aspectual verbs cannot both license NCA and have a non-agent subject at the same time. In the following sets of examples, the range of manipulations familiar from section 3 guarantees that the subject is non-agentive. NCA after aspectual verbs with these non-agent subjects is degraded to an extent that contrasts starkly with predicate ellipsis (parenthesised). In (62), the subject is non-agentive by virtue of being an underlyingly internal argument:

(62) a. The glass jug was already cracking from the heat when the pyrex jug started ??(to).

      b. My book was selling well in China long before yours started ??(to).

      c. This run-down hotel was sleeping 100 guests per night long before the grand hotel ever began ??(to).

      d. The fugitive was no longer being spotted around town once the sheriff's goons started ??(to be).

In (63), the subject is non-agentive by virtue of being a cause:

(63) a. His sickness isn't depressing him yet. But if we're not careful, his drugs will start ??(to).
      b. Yesterday, the flashing lights weren't tripping the alarm. But today, they started ??(to).

And in (64), the subject is a state-holder:

(64) a. Readers will lose faith in an author if the hero doesn't have living parents in one book, and then suddenly starts ??(to) in the next.
      b. It's weird if a character doesn't know English in one scene, and then suddenly starts ??(to) when it's necessary for the plot.

In sum, NCA with aspectual verbs requires the external argument to be agentive. Combined with our findings for causative VP-omission, it thus appears that Ø requires agentive external arguments quite generally.

5 Conclusion

We have argued that the silence found after the causee in causative VP-omission constructions in English is not predicate ellipsis, but rather a phonologically null pro-form akin to that found

in Null Complement Anaphora. 'Ø$_{VP}$' is merged as the complement of the Voice head selected by *make/let*, which introduces the causee in its specifier. This structure explains why, for most speakers, causees in causative VP-omission need to be external arguments – there are no positions inside the atomic pro-form where an internal argument can be generated.

We also observed a restriction on the interpretation of causative VP-omission: the external argument causee must be an agent, not a cause or state-holder. We further observed that the agent restriction holds of NCA with aspectual verbs, which suggests a more general link between NCA and agency.

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Appendix

This Appendix details the acceptability judgment survey reported in section 3.1.

The four sets of target items are given in (65)-(68):

(65)   *Melt* (repeated from 37)

    a.   We successfully made Pierre melt the chocolate, ...   (Agent)
        (i)   ... but we couldn't get Sally to.   (Agent-PE)
        (ii)   ... but we couldn't make Sally.   (Agent-VPO)
    b.   We successfully made the butter melt from the heat, ...   (Internal Argument)
        (i)   ... but we couldn't get the chocolate to.   (IA-PE)
        (ii)   ... but we couldn't make the chocolate.   (IA-VPO)
    c.   We successfully made a high heat melt the chocolate, ...   (Cause)
        (i)   ... but we couldn't get a low heat to.   (Cause-PE)
        (ii)   ... but we couldn't make a low heat.   (Cause-VPO)

(66)   *Crack*

    a.   We managed to make Barry crack the glass, ...   (Agent)
        (i)   ... but we couldn't get Judy to.   (Agent-PE)
        (ii)   ... but we couldn't make Judy.   (Agent-VPO)
    b.   We managed to make the glass crack from the pressure, ...   (Internal Arg.)
        (i)   ... but we couldn't get the plastic to.   (IA-PE)
        (ii)   ... but we couldn't make the plastic.   (IA-VPO)
    c.   We managed to make the pressure crack the glass, ...   (Cause)
        (i)   ... but we couldn't get the shockwaves to.   (Cause-PE)
        (ii)   ... but we couldn't make the shockwaves.   (Cause-VPO)

(67)   *Freeze*

    a.   We eventually made Ellie freeze her beer, ...   (Agent)
        (i)   ... but we couldn't get Freya to.   (Agent-PE)
        (ii)   ... but we couldn't make Freya.   (Agent-VPO)
    b.   We eventually made the beer freeze solid, ...   (Internal Argument)
        (i)   ... but we couldn't get the vodka to.   (IA-PE)
        (ii)   ... but we couldn't make the vodka.   (IA-VPO)
    c.   We eventually made the condensation freeze the beer, ...   (Cause)
        (i)   ... but we couldn't get a stream of cold air to.   (Cause-PE)
        (ii)   ... but we couldn't make a stream of cold air.   (Cause-VPO)

(68)   *Slam*

    a.   We were able to make Sandra slam the door, ...   (Agent)
        (i)   ... but we couldn't get Andrew to.   (Agent-PE)
        (ii)   ... but we couldn't make Andrew.   (Agent-VPO)
    b.   We were able to make the door slam shut, ...   (Internal Argument)
        (i)   ... but we couldn't get the window to.   (IA-PE)
        (ii)   ... but we couldn't make the window.   (IA-VPO)
    c.   We were able to make a heavy counterweight slam the door, ...   (Cause)
        (i)   ... but we couldn't get a coiled spring to.   (Cause-PE)
        (ii)   ... but we couldn't make a coiled spring.   (Cause-VPO)

The grammatical and ungrammatical fillers are listed in (69) and (70), respectively:

(69) Grammatical fillers

    a.   We didn't let Amal smash a glass, although she wanted to.
    b.   We offered them the opportunity to resubmit, but they refused.
    c.   Satoshi left at some point last night, I just don't remember exactly when.
    d.   I can make a cake, but I've never made a decent pavlova.
    e.   We made Lance finish his dinner, but we wouldn't make his friend do that.
    f.   Our host sat down on the rug, so we did too.

(70) Ungrammatical fillers

    a.   Someone had to go first, so I made Bill to.
    b.   The builder began to crack the glass from the heat, despite our warnings.
    c.   We first make the engineers test the vehicles, then we cause the CEO.
    d.   I can bake a good pie, but I can't make.
    e.   The kids didn't want to come back inside, so we had to make them to.
    f.   The windows all slammed shut by the wind, but we re-opened them.

The pattern of results from Table 1 remains the same after transforming the raw data to z-scores, as presented in Table 2:

Causee Type	Predicate Ellipsis		VP-omission		Difference
	Mean	SD	Mean	SD	in means
Agent	0.71	0.29	0.07	0.51	0.64
Internal Argument	0.56	0.36	-0.45	0.48	1.01
Cause	0.40	0.37	-0.83	0.35	1.23

Table 2: Z-scores

In particular, the difference between Predicate Ellipsis and VP-omission is greater with Internal Arguments (1.01) and Causes (1.23) than with Agents (0.64). Two-tailed t-tests continued to show all three differences to be significant: Agent vs. Internal Argument ($p = 0.000031$); Agent vs. Cause ($p = 0.0000041$); and Internal Argument vs. Cause ($p = 0.010$). Notice also that the only two sentence types with negative mean ratings are those we analyse as ungrammatical, namely VP-omission with Internal Argument (-0.45) and Cause (-0.83) causees.