

Depictive Secondary Predicates DO Rule Out Small Clause Analyses: A Response to Hu and Cheng (2024)

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1 Introduction

Bruening (2018) shows that facts of depictive secondary predicates are problematic for small clause approaches to such phenomena as resultatives, caused motion constructions, particle verb constructions, and double object constructions. Focusing on resultatives, Hu & Cheng (2024) argue that, on “another set of reasonable assumptions,” the facts cited in Bruening (2018) are not problematic for a small clause analysis. In this paper, I show that those “reasonable assumptions” do not actually solve the problem. Depictive secondary predicates are incompatible with the very premise of the small clause analysis, and therefore rule it out absolutely. The only way to modify a small clause analysis to make it compatible with the facts is to turn it into a non-small-clause analysis.

Bruening (2018) also argued that anaphora distinguishes true small clauses from the putative small clause in small clause analyses of resultatives, caused motion constructions, particle verb constructions, and double object constructions. Hu & Cheng (2024) try to account for these facts as well, but I show here that their proposal regarding anaphora also fails. They also try to justify their approach to binding through a claim about *have* causatives, but I show with corpus data that their claim about *have* causatives is incorrect. The actual facts support the conclusion that all constituents that contain a subject and a predicate are opaque domains for anaphora in English. This rules out a small clause analysis of resultatives. In addition, I show that syntactic constituency data and semantic entailment patterns are also incompatible with the small clause analysis of resultatives.

Like Hu & Cheng (2024), I will concentrate on resultative secondary predicates here, with examples like the following:

- (1) a. Sam hammered the metal flat.
- b. The sheriff shot him dead.
- c. She opened the door wide.

In resultative secondary predicates, there is an adjective (or possibly a PP) that describes the state that results from the main predicate, described by the main verb. For instance, in *The sheriff shot him dead*, the direct object of the verb is understood to be dead as a direct result of being shot by the sheriff. (Like Bruening 2018 and Hu & Cheng 2024, I will only discuss transitive resultative constructions here.)

I will begin in section 2 by describing Hu and Cheng’s small clause analysis of resultatives and their assumptions. Section 3 discusses the problem from depictive secondary predicates and Hu and Cheng’s proposed solution to this problem. As I will show, it does not actually solve the problem. Not only that, it is impossible for a small clause analysis to solve the problem without becoming a non-small-clause analysis. Section 4 then discusses anaphora, and Hu and Cheng’s proposal for why canonical small clauses always constitute opaque domains for anaphora but the putative small clause in a resultative does not. I show that this proposal also fails, and true small clauses are always opaque domains for anaphora. Section 5 shows that the proposed small clause analysis of resultatives is semantically inadequate. It does not capture entailment patterns. Section 6 shows that there is also syntactic constituency evidence that distinguishes canonical small clauses from the putative small clause in a resultative. This contradicts Hu and Cheng’s claim that the two are syntactically identical but semantically distinct. All of this evidence indicates that Hu & Cheng (2024) are incorrect, and a small clause analysis of resultatives is untenable. More generally, depictive secondary predicates *do* rule out small clause analyses of the phenomena discussed by Bruening (2018), as that paper originally stated.

2 The Proposed Small Clause Analysis of Resultatives

It is important to define what a small clause is. A small clause is a constituent of a propositional type, like a full clause, but which lacks functional structure. It typically consists solely of a subject and a predicate. However, there is clear evidence that the entire small clause is the argument of any selecting predicate, and no sub-part of it is. Consider the following pair, where (2a) has a full embedded (non-finite) clause and (2b) has an embedded small clause:

- (2) a. I consider [them to be crazy].
 b. I consider [them crazy].

In both cases, the object of *consider* is the proposition ‘they are crazy’, and not just *them*. This can be shown by expletive subjects in the full clause case, and by idiom chunks in the small clause case:

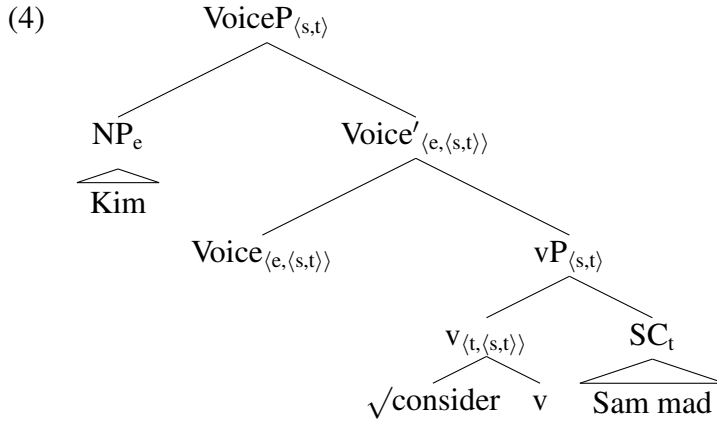
- (3) a. I consider [there to be merit to both of these views].
 b. I consider [the cat out of the bag]. (=the secret is no longer secret)

The expletive *there* can only be a subject and could not be a semantic argument of *consider*. Neither could *the cat*, since it is only interpreted idiomatically in virtue of being part of the idiom *the cat out of the bag* (by being the subject of the predicate *out of the bag*).

So, in a small clause, the entire small clause is the argument of something else, and no sub-part of it is. If one were to propose a small clause analysis of a resultative construction, then it would have that character, necessarily, or it would not be a small clause analysis. For instance, in *Sam hammered the metal flat*, the constituent [*the metal flat*] would be a small clause; only that constituent would be an argument of any other part of the clause, and no sub-part of it would be. In particular, *the metal* could not be a semantic argument of *hammer*. If it were, then the analysis would not be a small clause analysis.

With this in mind, let us turn to Hu & Cheng (2024). They propose that small clauses all have the same syntax but they can have two different semantics. First, canonical small clauses

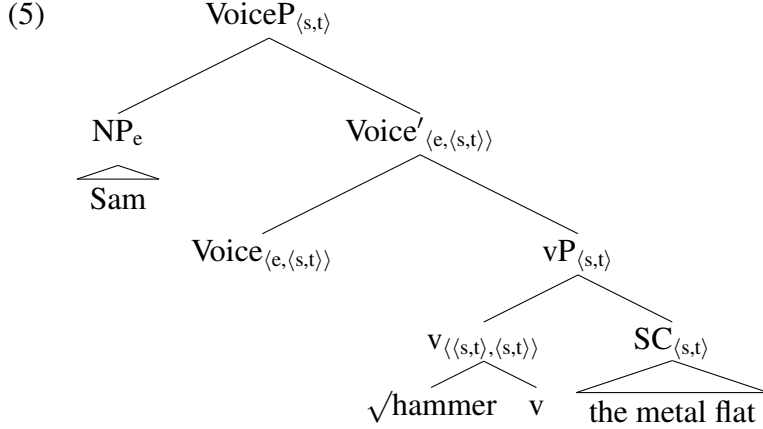
in examples like *Kim considers Sam mad* are propositions of type t . Such examples have the following structure and semantics (Hu & Cheng 2024: example (9)):



- a. $\llbracket \text{SC} \rrbracket = \lambda s. \text{mad}(\text{Sam}, s)$
The state variable is existentially bound by the epistemic operator introduced in this construction:
- b. $\llbracket \text{SC} \rrbracket = \exists s[\text{mad}(\text{Sam}, s)]$
- c. $\llbracket \sqrt{-v} \rrbracket = \lambda p_t \lambda e. \text{consider}(e) \ \& \ \text{BELIEVE}(p, e)$
- d. $\llbracket vP \rrbracket = \lambda e. \text{consider}(e) \ \& \ \text{BELIEVE}(\exists s[\text{mad}(\text{Sam}, s)], e)$
(d) comes from (b) and (c) by Functional Application
- e. $\llbracket \text{Voice} \rrbracket = \lambda x \lambda e. \text{AGENT}(x, e)$
- f. $\llbracket \text{Voice}' \rrbracket = \lambda x \lambda e. \text{AGENT}(x, e) \ \& \ \text{consider}(e) \ \& \ \text{BELIEVE}(\exists s[\text{mad}(\text{Sam}, s)], e)$
(f) comes from (d) and (e) by Event Identification (Kratzer 1996)
- g. $\llbracket \text{NP} \rrbracket = \text{Kim}$
- h. $\llbracket \text{VoiceP} \rrbracket = \lambda e. \text{AGENT}(\text{Kim}, e) \ \& \ \text{consider}(e) \ \& \ \text{BELIEVE}(\exists s[\text{mad}(\text{Sam}, s)], e)$
(h) comes from (f) and (g) by Functional Application

It is not clear why there is a BELIEVE predicate in addition to *consider*; Hu and Cheng’s footnote 4 says that this is “for simplicity’s sake.” Leaving this complication aside, the important thing here is that the eventuality variable in the small clause (the state s) is existentially closed, so that the constituent [*Sam mad*] is a proposition of type t . This proposition serves as the first argument of the verb (which Hu and Cheng assume, following Marantz 2013, consists of a category-less root adjoined to v).

While there are many objectionable aspects of this analysis, the idea that the small clause is a proposition of type t does not seem unreasonable. In contrast, Hu & Cheng (2024) propose that in a transitive resultative construction, the syntax is identical, but the small clause is type $\langle s, t \rangle$ rather than type t (Hu & Cheng 2024: example (10)):



- a. $\llbracket \text{SC} \rrbracket = \lambda s. \text{flat}(\text{the metal}, s)$
- b. $\llbracket \sqrt{-}v \rrbracket = \lambda P_{\langle s,t \rangle} \lambda e. \text{hammer}(e) \ \& \ \exists s[\text{P}(s) \ \& \ \text{CAUSE}(s,e)]$
- c. $\llbracket vP \rrbracket = \lambda e. \text{hammer}(e) \ \& \ \exists s[\text{flat}(\text{the metal}, s) \ \& \ \text{CAUSE}(s,e)]$
(c) comes from (a) and (b) by Functional Application
- d. $\llbracket \text{Voice} \rrbracket = \lambda x \lambda e. \text{AGENT}(x,e)$
- e. $\llbracket \text{Voice}' \rrbracket = \lambda x \lambda e. \text{AGENT}(x,e) \ \& \ \text{hammer}(e) \ \& \ \exists s[\text{flat}(\text{the metal}, s) \ \& \ \text{CAUSE}(s,e)]$
(e) comes from (c) and (d) by Event Identification
- f. $\llbracket \text{Sam} \rrbracket = \text{Sam}$
- g. $\llbracket \text{VoiceP} \rrbracket = \lambda e. \text{AGENT}(\text{Sam}, e) \ \& \ \text{hammer}(e) \ \& \ \exists s[\text{flat}(\text{the metal}, s) \ \& \ \text{CAUSE}(s,e)]$
(g) comes from (e) and (f) by Functional Application

The difference between the two small clause types is achieved technically by introducing an existential operator in the canonical small clause, but not in the resultative small clause. This existential operator has no syntactic representation; it is present only in the semantics.

According to Hu & Cheng (2024), the verbal root serves only to modify the event introduced by little *v* (following Marantz 2013). Hu and Cheng are not explicit about this, but it then follows that in the resultative the head *v* is what takes a predicate of type $\langle s,t \rangle$ as its first argument and says that the event it describes causes the state described by its complement (and it existentially quantifies over that state). The root itself is only responsible for the *hammer(e)* part (it is essentially an event modifier). Notice also that, in this analysis (in keeping with the premises of a small clause analysis), the NP *the metal* does not describe a participant in the causal event *e* described as a hammering event. It is only the holder of the state *flat*.

This is exactly the problem identified by Bruening (2018) with regard to depictive secondary predicates (see section 5 on incorrect semantic entailments). Section 3 describes this problem and the solution proposed for it by Hu & Cheng (2024), and then shows that this proposal does not actually solve the problem.

3 Depictive Secondary Predicates

Depictive secondary predicates are predicates that predicate a state of one of the event participants throughout the duration of the event (e.g, Williams 1980, Rothstein 2004). In transitive resultatives,

Bruening (2018) shows that depictives characterize the state of the direct object during the causing event *e*, and not solely during the resulting state:

- (6) (Bruening 2018: 540, (6a–b))
- a. It's best to hammer metal flat wet, but it's OK if it has dried by the time it's completely flat.
 - b. # It's best to hammer metal flat dry, but it's OK if it's wet during the hammering.

In (6a), it is acceptable to have the depictive characterize the state of the metal during the hammering but not during the result state. In (6b), it is not possible to have the depictive characterize the metal solely during the result state; if it were, sentence (6b) would not be a contradiction (the metal could be wet during the hammering but dry in the resulting flat state). The following pair makes the same point:

- (7) (Bruening 2018: 541, (7a–b))
- a. She always blows her hair dry uncombed, and then starts combing it once it's dry.
 - b. She combs her hair first, but it slowly gets tangled up again as she dries it. #So she blows her hair dry uncombed.

In (7b), the second sentence contradicts the first. However, if the depictive *uncombed* could characterize the state of the hair only in the resultant state, it would not be a contradiction.

It is also important that, while resultative secondary predicates can add an NP that is not an argument of the main verb (8a), depictive secondary predicates cannot (8b–8c) (Rothstein 2004):

- (8)
- a. The rooster crowed Sam awake.
 - b. John drove Mary drunk. (*'John drove, and throughout this event Mary was drunk'; Rothstein 2004: 70, (41))
 - c. The rooster crowed Sam asleep. (*'The rooster crowed, and throughout this event Sam was asleep.')

As Williams (1980) and Rothstein (2004) note, the NP has to name a participant in the main (verbal) event with a depictive, independently of the appearance of the depictive. The problem pointed out by Bruening (2018) for small clause analyses is that this is not true in small clause analyses. In Hu and Cheng's (2024) small clause analysis of resultatives described above, the NP object does *not* name a participant in the verbal event. It only names a participant in the resultant state. Hence, any depictive secondary predicate modifying the causing event should be unable to characterize the NP object, because it does not name a participant in the causing event.

Hu and Cheng's (2024) proposed solution to this problem is to say that depictives modify NPs during time spans, not during events. Depictives modify temporal variables, not event variables. In their proposed analysis, the resultative small clause has an unsaturated state variable (it is type $\langle s,t \rangle$). This small clause has no temporal information. The verbal event and the resultative state then become part of a single time span, bound by the matrix tense. It is this time span that is modified by the depictive, according to Hu & Cheng (2024).

Resultatives contrast with canonical small clauses, where depictives modify the subject of the small clause only during the state described by the small clause. In (9a), the soldiers are probably not fully dressed during the wanting event, but they must be during the state of being on the parade

ground; and in (9b), the third person is not necessarily drunk during the considering event, but being beneath contempt and being drunk are necessarily contemporaneous:

- (9) (Bruening 2018: 549, (32a,d))
- a. I want [the soldiers on the parade ground fully dressed]!
 - b. I consider [him beneath contempt drunk].

The contrast between canonical small clauses and resultatives follows because, according to Hu & Cheng (2024), a canonical small clause is a complete proposition, type *t*, and it “has its own temporal domain.” A depictive contained within the small clause will modify this temporal domain.

Hu and Cheng’s proposed solution for resultatives does not actually solve the problem. In a resultative, the state has to come about as a result of the causing event. It cannot be contemporaneous with it, but has to temporally abut it (as in all causatives). Having the caused eventuality be part of a single undifferentiated temporal domain along with the causing eventuality is an untenable semantics for causation. Worse, the proposal fails account for the asymmetry in (6), repeated below as (10):

- (10) (Bruening 2018: 540, (6a–b))
- a. It’s best to hammer metal flat wet, but it’s OK if it has dried by the time it’s completely flat.
 - b. # It’s best to hammer metal flat dry, but it’s OK if it’s wet during the hammering.

As these examples show, the depictive can characterize the state of the metal throughout (most of) the hammering event but not during the resulting flat state; but it cannot characterize the state of the metal just during the resulting flat state and not during the hammering event. If there were just a single undifferentiated temporal span, as Hu and Cheng’s analysis seems to require, then this asymmetry cannot be accounted for. The expectation of the analysis is that the depictive can only characterize the state of the NP throughout the entire time span, from beginning to end, including both the causing part and the resulting part. This is not correct: A depictive can characterize the state of the NP just during the causing event. In Hu and Cheng’s analysis, we would have to say that, even though the depictive modifies the entire time span, it can pick out just a sub-part of it. But if the depictive can pick out just a sub-part of the single undifferentiated temporal span, as it would have to in order to modify just the causing eventuality and not the resultant state, then there is no reason it could not pick out the end part of the span as well as the beginning, and thereby modify just the resultant state. Hu and Cheng’s proposed solution therefore does not actually account for the facts presented by Bruening (2018). It is not a solution at all.

In contrast, if depictives characterize the state of an individual throughout the run time of an event, as in the analysis endorsed by Bruening 2018 (based on Geuder 2000, Pyllkkänen 2008, but note that adopting this particular analysis is not crucial to the argument), and the NP object names a participant in the hammering event (as in analyses that do not involve small clauses), then we expect the depictive to be able to characterize the state of the NP solely during the run time of the causing event. The depictive just has to adjoin to a projection of the VP that includes the event variable for the causing event. To fully account for all the facts, we would also have to ban depictives from adjoining to resultative APs. This is not fully explained, but since the depictive cannot characterize the state of the NP solely during the state described by the resultative adjective, it appears that something must rule this out. I will leave this to future research. The important

point is that, in order to account for the contrast in (10), we have to distinguish the run-time of the causing event from the temporal interval of the resultant state. A depictive characterizes the NP object during the run-time of the causing event, and not (solely) during the temporal interval of the resultant state. The proposal of Hu & Cheng (2024) is unable to make this distinction, since it has only a single time interval that subsumes both the causing event and the resultant state, and the depictive only modifies that time interval.

I conclude that Hu and Cheng's (2024) proposal has not solved the problem for the small clause analysis. Not only that, it is impossible to solve the problem for the small clause analysis. What depictive secondary predicates show us is that the NP characterized by the resultative AP must name a participant in the causing event. But any small clause analysis that is modified to have this property is no longer a small clause analysis. As explained above, in a small clause analysis, no sub-part of the small clause can be a semantic argument of any higher predicate. Only the small clause itself can be an argument of any other predicate. The facts are therefore incompatible with the very premise of the small clause analysis, and they rule out a small clause analysis completely. This was the point of Bruening (2018), and Hu & Cheng (2024) have not shown that it is incorrect.

4 Anaphora

As shown in the previous section, depictive secondary predicates are incompatible with the very premise of the small clause analysis, and therefore rule it out completely. However, Bruening (2018) also added facts from anaphora that support that conclusion. Hu & Cheng (2024) also try to account for these facts within a small clause analysis, but they do not succeed, as I will show in this section.

Canonical small clauses constitute opaque domains for anaphora (Pesetsky 1995, Bruening 2010), meaning that an anaphor commanded by the subject of the small clause cannot be bound from outside the small clause:

- (11) (Bruening 2018: 554, (41a–e))
- a. * Maxwell₁ considers her proud of himself₁.
 - b. * Maxwell₁ said that, with Sally angry at himself₁, he won't be able to retrieve his kayak from her house.
 - c. * The general₁ wants them away from himself₁!
 - d. * Maxwell₁ said that, with Sally beside himself₁, he could do anything.
 - e. * That giant₁ believes a dwarf beside himself₁ to be an amusing sight.

In contrast, the putative small clause in a resultative does not constitute an opaque domain for anaphora:

- (12) (Bruening 2018: 555, (43a–b))
- a. The gingerbread man₁ pounded the dough flatter than himself₁.
 - b. Mr. Freeze froze the bank teller colder than himself₁.

Bruening (2018) argues that this difference also rules out a small clause analysis of resultatives, as all small clause constituents necessarily constitute a binding domain. Bruening (2018) suggests

that this is because the presence of a subject delimits the binding domain for any NPs it commands (see Bruening 2021 for recent discussion). Since true small clauses all have subjects, we expect true small clauses to constitute opaque domains for anaphora.

Hu and Cheng’s (2024) response is to say that the binding domain is defined semantically, not syntactically. They decline to formalize the binding domain, so it is not entirely clear what they mean. What they say is that “a saturated category” constitutes a binding domain. At the same time, they also appear to endorse a phase-based approach to the binding domain (Lee-Schoenfeld 2004, Safir 2014, Charnavel & Sportiche 2016), but these are not the same, as I will show momentarily. As far as their analysis of small clauses is concerned, they clearly intend that a small clause that is a proposition of type t is a binding domain (canonical small clauses), but a small clause that is type $\langle s,t \rangle$ is not (resultatives). The difference is apparently whether there is an open s variable or not.

The first thing to note is that the phase is not co-extensive with saturated categories. In most versions of phase theory, the maximal projection of the head that projects the external argument (VoiceP, for Hu and Cheng) is a phase. But VoiceP is not completely saturated: it still has an open eventuality argument (it is type $\langle s,t \rangle$ in Hu and Cheng’s analysis; see the trees in (4) and (5)). The eventuality argument is not closed until VoiceP combines with Aspect or Tense (see von Stechow & Beck 2015, for instance).

Nevertheless, VoiceP is arguably a binding domain. As was noted by Huang (1993), an anaphor inside a fronted predicate is obligatorily bound by the semantic external argument of that predicate (see Adger et al. 2017, Bruening & Al Khalaf 2019 for experimental confirmation of these judgments):

- (13) a. Contradict herself though I know he thinks she has, . . .
- b. * Contradict himself though I know he thinks she has, . . .
- (14) a. How angry at herself does he believe Samantha to be?
- b. * How angry at himself does he believe Samantha to be?

In particular, the binding domain for the anaphor does not expand to include a higher subject, although there ought to be a representation where the predicate has stopped in an intermediate Spec-CP:

- (15) . . . [he thinks [_{CP} [_{VoiceP} contradict himself] she has . . .]]

If the fronted VoiceP is type $\langle s,t \rangle$, then in Hu and Cheng’s system we might expect the binding domain for the anaphor to be able to expand from Spec-CP to include the higher subject *he*.

Huang’s (1993) approach to this is to say that the fronted category includes a representation of the external argument. In current terms, it is a VoiceP, with the trace of the subject in Spec-VoiceP. If VoiceP is a binding domain, it will remain a binding domain when it moves, and movement can never change the binding possibilities for NPs within it.

This is arguable, of course, but the point is that VoiceP phases are not semantically saturated phrases. Phase-based approaches to binding do take VoiceP (or its equivalent, often called vP) to be the binding domain for anaphors and pronouns inside VP (Lee-Schoenfeld 2004, Safir 2014, Charnavel & Sportiche 2016). It is therefore inconsistent of Hu & Cheng (2024) to approve of phase-based approaches to binding while simultaneously saying that predicates of type $\langle s,t \rangle$ are not binding domains.

Let us leave that aside, however, and evaluate the suggestion that phrases of type $\langle s,t \rangle$ are not binding domains while propositions of type t are, since this is what is important to distinguish between the two putative types of small clauses. The claim is that only propositions of type t are binding domains, and any semantically unsaturated phrase is not a binding domain. Moreover, it is clear from Hu and Cheng's (2024) discussion of *have* causatives (see below) that they view temporal dependence as evidence that a phrase is unsaturated and is type $\langle s,t \rangle$. So, canonical small clauses, which are type t , are viewed by them as temporally independent. But their resultative small clause is type $\langle s,t \rangle$ and it is part of the same temporal interval as the main predicate. So, we should expect to see temporal dependence correlating with binding.

It does not. Perception complements are clearly temporally dependent on the matrix tense. They cannot have conflicting adverbials, nor can an adverb in the perception complement fail to match the matrix tense:

- (16) a. He saw her rob the ATM.
 b. * Today he saw her rob the ATM yesterday.
 c. * He saw her rob the ATM tomorrow.
 d. * He sees her rob the ATM yesterday.

It would make sense in Hu and Cheng's analysis for perception complements to be type $\langle s,t \rangle$, given their temporal dependence on the matrix clause. We would then expect them to not be opaque domains for anaphora. They are, however:

- (17) a. She saw him email himself/*him.
 b. She saw him email her/*herself.
 (18) a. She heard him badmouth her/*herself.
 b. She heard him badmouth himself/*him.

We can also look at non-finite clauses. Wurmbrand (2014) argues that there are three different types of infinitives in English. One is temporally independent (her "future" infinitives). The other two are both temporally dependent. She calls these "simultaneous propositional attitudes" and "tenseless simultaneous infinitives." Both are interpreted as simultaneous with the matrix tense, as their names imply. See Wurmbrand (2014) for the evidence that they are simultaneous. Simultaneous propositional attitudes can have an embedded subject that is distinct from the matrix subject, and so we can easily test whether they constitute an opaque domain for anaphora. They do:

- (19) a. She believes him to have insulted himself/*him.
 b. She believes him to have insulted her/*herself.

Wurmbrand's tenseless simultaneous infinitives all involve subject control or raising to subject, so it is harder to tell whether the infinitive is a binding domain. However, we can test whether an internal argument of the higher verb is inside or outside the binding domain of the lower clause. It is outside:

- (20) a. He seemed to her to be insulting himself/*herself.
 b. * He seemed to her₁ to be insulting Mary₁.

The disjoint reference effect in (20b) shows that the issue in (20a) is not command; the object of the P does command into the lower clause, as we can see from Condition C in (20b). The object of the P can only fail to bind an anaphor in the embedded clause in (20a) because the embedded non-finite clause constitutes a binding domain. However, it is tenseless and simultaneous with the matrix clause (see Wurmbrand 2014), so by Hu and Cheng’s reasoning it should not constitute a binding domain. The binding domain should be the entire sentence in (20a), and *herself* should be grammatical.

Another relevant case is *have* causatives, where Hu & Cheng (2024) argue that the embedded clause is temporally dependent and does *not* constitute a binding domain. They claim that *have* causatives differ from *make* causatives in both respects: The complement of a *make* causative is temporally independent and it constitutes a binding domain. They give the following contrast in binding:

- (21) (Hu & Cheng 2024: (29a–b), their judgments)
- a. John₂ made Sam₁ criticize himself_{1/*2}.
 - b. John₂ had Sam₁ criticize himself_{1/2}.

However, they give only this one example and cite “space limitations” as a reason they have not verified these judgments. They also say nothing about the source of these judgments, although they do not appear to be native speakers of English. Not only is what they have done irresponsible treatment of data, the judgments are wrong. In my judgment as a native speaker of English, there is no difference between *make* causatives and *have* causatives in binding. The judgment is very sharp if the two potential antecedents differ in gender:

- (22) John had Mary criticize herself/*himself.

This is confirmed by google searches, which turn up many examples of a pronoun referring to the higher subject, but no examples of an anaphor in the same context. For example, searching for “she had him drive her” (on 8/29/2024) turns up many relevant hits. A few are shown here (but there are many others):

- (23) search string: “she had him drive her”
- a. She had him drive her to an old rundown park that was once full of grass and trees,... (https://kropseniorhigh.org/ourpages/auto/2023/6/13/49851604/INK)
 - b. Sam refuses to leave her at the shady hotel she had him drive her to and ... (https://www.goodreads.com/book/show/201577854-accidental-marriage-with-the-grumpy-doctor)
 - c. Still tired and groggy, she had him drive her to her apartment complex. (https://unsolvedmysteries.fandom.com/wiki/Dr._Kenneth_Frank)

Searching for “she had him kiss her” (on 8/29/2024) also turns up many relevant hits, a few of which are shown below:

- (24) search string: “she had him kiss her”
- a. She had him kiss her to get rid of the other guy before she left the club,... (https://90210.fandom.com/wiki/Tammy_Hansen)

- b. . . she had him kiss her at the right moment to distract the guys that were looking for them. (https://www.reddit.com/r/dndnext/comments/2jdjua/alternate_method_for_group_stealth_checks/)
- c. Laura was using Willie to make another boy jealous, she had him kiss her on the cheek. (<https://filmboards.com/board/p/13260396/permalink/>)

In contrast, searches for “she had him drive herself” and “she had him kiss herself” turn up no hits at all, not even irrelevant ones (searches performed 8/30/2024). For comparison, searches for the well-known non-complementarity of anaphors and pronouns in PPs (Hestvik 1991, Reinhart & Reuland 1993, Lee-Schoenfeld 2004), for instance “she pulled the blanket over herself/her” turn up many relevant instances of both (searches performed 9/6/2024).¹ If a reflexive were allowed in the complement of a *have* causative referring to the matrix subject, then we would expect to see that reflected in attested data. We do not. Only pronouns occur. I conclude that the complement of a *have* causative is a binding domain, contra Hu & Cheng (2024).²

As we can see, there is no support for Hu and Cheng’s contention that binding domains are co-extensive with saturated propositions. In every case where there is an embedded constituent that clearly includes a subject and a predicate, that constituent constitutes a binding domain, regardless of its temporal properties. This is true of *have*-causatives as well as every other type of embedded subject-predicate constituent. Their prediction that there should be subject-predicate constituents that do not constitute binding domains appears to be false, in English at least, and their proposal for distinguishing canonical small clauses from the proposed small clause in resultatives fails.

Hu and Cheng’s (2024) discussion of binding into NPs is also off the mark. They try to argue from NPs that delimiting the binding domain by the presence of a subject is incorrect. However, due consideration of the facts actually indicates the opposite. First, it has been known since Pollard

¹For an analysis of non-complementarity in PPs that takes the binding domain to be delimited by a subject, see Bruening (2014, 2021).

²Hu & Cheng (2024) also cite various claims from Ritter & Rosen (1993) and Bjorkman & Cowper (2013) concerning other putative differences between *have* causatives and *make* causatives. I find all of these claims dubious. For instance, according to Ritter & Rosen (1993), *Sue made Mary stop smoking* can mean that Sue turned Mary into a non-smoker, but *Sue had Mary stop smoking* can only mean that Mary stopped smoking for a short period of time (at Sue’s request). I do not agree with this judgment, and find numerous examples online of the string, “had him stop smoking,” which seem to mean “quit smoking” (google search performed 8/29/2024):

- (i) a. I never understood why they had him stop smoking when he has A FUCKING HEALING FACTOR. (discussing comic book character Wolverine; https://www.reddit.com/r/comicbooks/comments/hsoace/og_wolvie_anyone_work_in_progress/)
- b. My brother’s wife had him stop smoking weed while they were trying to make my niece. (<https://bmxmuseum.com/forums/viewtopic.php?pid=6612399>)
- c. Boaz asks if he remembers when Emilia had him stop smoking weed because she was on a health kick. (https://queen-of-the-south.fandom.com/wiki/La_Maldicin)
- d. I had him stop smoking with the patch, it was so hard!! (<https://www.agingcare.com/discussions/coping-with-severe-copd-in-elderly-parent-167814.htm>)

I also perceive no difference in conflicting adverbials, the scope of matrix negation, or the presence of embedded negation, but I have not attempted to investigate these further. Of course, Hu & Cheng (2024) could say that they were wrong about *have* causatives being temporally dependent, and then their analysis does not lead to the expectation that the embedded phrase will not be binding domain. However, the larger point here is that there is *no* embedded phrase that includes a subject and a predicate and is not a binding domain for anaphors lower than that subject.

& Sag (1992) that NPs are contexts for exempt anaphors. That is, anaphors inside NPs do not require a syntactic binder. This can be shown with examples like the following, where the anaphor does not even have an antecedent in the same sentence:

- (25) Mary₁ was extremely upset. That picture of herself₁ on the front page of the Times would circulate all over the world. (Pollard & Sag 1992: 268, (24b))

Given the exempt status of anaphors in this context, the non-complementarity of pronouns and anaphors inside NPs is not surprising:

- (26) The men saw [the pictures of themselves/them]. (Huang 1982: 324, (19))

All that needs to be said is that the NP is the binding domain, and the acceptability of the pronoun follows. I will propose here that this is because the noun has a semantic subject. This is something that many have proposed, for instance Chomsky & Lasnik (1993), although I do not commit to this semantic subject being present in the syntax (as PRO, e.g.). It can be implicit and not present in the syntax at all, and still delimit the binding domain (the definition of the domain can make reference to the maximal projection of a predicate that takes a semantic subject). If all Ns have semantic subjects, then the binding domain for any NP within the NP will be the containing NP. This makes pronouns covalued with something outside the NP grammatical. The acceptability of the anaphor follows even though the NP is the binding domain because anaphors can be exempt inside NPs (and refer based on something like point of view).

The exception to the non-complementary pattern just described is that, if an internal argument of the head noun is meant to be covalued with the logical external argument of that noun (implicit or explicit), then it must be a local anaphor and cannot be a pronoun:

- (27) a. John is a big fan of himself/*him. (Hu & Cheng 2024: (16b))
b. John told stories about himself/*him. (Chomsky & Lasnik 1993: 553)
c. The surgeon performed the operation on himself/*him. (based on Reinhart & Reuland 1993)
d. The operation on himself/*him was a success. (*him if covalued with the one performing the operation)
e. This constant criticism of herself/*her is getting old. (*her if covalued with the criticizer)
f. Immolation of oneself/*one has been practiced in various cultures. (*one if covalued with the immolater)

This again highlights the importance of a semantic subject. It is not at all relevant whether the NP contains an unbound eventuality variable or not. It is clear that what matters in (27) is the semantic subject, and it then becomes very plausible that the semantic subject is what delimits the binding domain in (26), too. Contra Hu & Cheng (2024), binding in NPs actually supports the idea that the binding domain makes reference to a semantic subject, and offers no support for their contention that what matters is semantic completeness.

Charnavel & Sportiche (2016) claim that inanimates reveal that, in French, a non-exempt anaphor inside an NP can be bound from outside the NP. This does not seem to be the case in English. All such examples that I have been able to construct require that the inanimate be the implicit subject of the noun. Consider the following:

- (28) a. This machine automatically commences lubrication of itself. (can only be interpreted as self-lubrication)
 b. This satellite will blink to warn about the impending destruction of itself. (can only be interpreted as self-destruction, not, say, an approaching asteroid)
 c. This law includes a reference to itself. (can only be understood as self-reference)

If an explicit subject is added to the NP in an example like (28c), the result is quite ungrammatical:

- (29) * This law includes a prescient senator's reference to itself.

This again points to the importance of a subject. Nouns have subjects, implicit or explicit, and therefore constitute binding domains. The only exception is that NPs are also contexts for exempt anaphors, where an apparent anaphor refers according to something like point of view (which therefore excludes inanimates).³

I conclude that Hu and Cheng's proposal regarding anaphora fails. True small clauses constitute opaque domains for anaphora, precisely because they include a subject. If some phrase in the syntax is not an opaque domain for anaphora, then it is not a small clause. In particular, resultatives should not be analyzed as small clauses.⁴

5 The Small Clause Analysis is Semantically Inadequate

Previous sections have addressed depictive secondary predicates and anaphora, which were the phenomena focused on by Bruening (2018) and Hu & Cheng (2024). In this section, I will point out an additional problem for the small clause analysis of resultatives. The problem is that it is semantically inadequate.

Below I repeat the denotation of VoiceP in Hu and Cheng's analysis (their example 10g):

- (30) $[[\text{VoiceP}]] = \lambda e. \text{AGENT}(\text{Sam}, e) \ \& \ \text{hammer}(e) \ \& \ \exists s[\text{flat}(\text{the metal}, s) \ \& \ \text{CAUSE}(s, e)]$

As already pointed out, in this analysis, the NP *the metal* does not name a participant in the causal event *e* described as a hammering event. It is only the holder of the state *flat*. What the VoiceP

³I do find that nouns like *picture* and *photograph* allow an inanimate anaphor referring to a higher subject, with no implication that the inanimate is the "subject" (author/producer, or possessor) of the noun (i):

- (i) a. This computer couldn't process a photograph of itself.
 b. This satellite regularly analyzes photographs of itself that it receives from another satellite.
 (ii) a. This computer is programmed so that someone has to manually feed it pictures of itself.
 b. This satellite was designed so that engineers could send it pictures of itself taken by another satellite.

However, anaphors inside these "picture-NPs" also allow a non-local antecedent (ii), indicating that they are exempt, not local anaphors (meaning that inanimate anaphors sometimes can be exempt, contra Charnavel & Sportiche 2016). I therefore do not take these types of NPs to be problematic for the claim that an NP is the binding domain for a local anaphor, but I will have to leave a full exploration of these NPs to future research.

⁴Harley & Jung (2015) suggest that some small clauses are phases and others are not, and that the binding domain is the phase (see references above). However, without some independent way of deciding which small clauses are phases and which are not, this proposal does nothing more than restate the facts.

means is that Sam is the agent of a hammering event, and this hammering event is the cause of a state of flatness where the metal is flat.

This analysis therefore fails to capture the entailment that the metal is necessarily hammered:

- (31) Sam hammered the metal flat #but he did not hammer the metal.

In Hu and Cheng's analysis, Sam could have hammered something else (or nothing at all), and so long as the metal being flat is the direct result of this hammering, the sentence would be true. This does not match the observed facts (see especially Carrier & Randall 1992 and Williams 2015: chapter 13).

Notice also that there *are* resultative constructions where the subject of the resultative secondary predicate is not a selected argument of the verb, and in these examples there is no entailment that the subject of the resultative is a participant in the causing event:

- (32) a. The dog barked Sam awake.
b. *The dog barked Sam.

In fact it is not possible to have the subject of the resultative be the object of the verb. Hu and Cheng's proposed semantics is a reasonable one for non-selected objects in resultatives ("the dog was the agent of a barking event, and this barking event caused the state of Sam being awake"). But then it is *not* a reasonable analysis of selected objects, as in *Sam hammered the metal flat*.

I conclude that the small clause analysis fails to make the right semantic entailments, and it is therefore an inadequate analysis. Notice that it fails here for the same reason that it failed on depictive secondary predicates: The NP object does not name a participant in the causing event. Semantic entailments and depictive secondary predicates are both showing us that a selected NP object must name a participant in the causing event, as well as the holder of the resultant state. Small clause analyses do not have this property, and they are therefore untenable.

6 Syntax: Constituency

As described above, in Hu and Cheng's (2024) analysis, canonical small clauses and resultatives have the same syntax, but different semantics. However, there is constituency data—syntax—that distinguish canonical small clauses from resultatives.

Canonical small clauses can be dislocated, in pseudoclefting for instance (Farrell 2005), but the NP plus resultative AP cannot be:

- (33) a. John hopping mad is what I like to see.
b. Her assistant available night and day is what she needs.
c. Those interlopers off my ship is what I want!
d. *The metal flat is what I hope to hammer.
e. *The sheriff dead is what/who I hope to shoot.

Canonical small clauses can be passivized and undergo tough movement (Farrell 2005), but the putative small clause of a resultative cannot:

- (34) a. Him in a kimono could only be imagined by someone like you. (Farrell 2005: 111, (34d))
 b. * The metal flat could only be hammered by someone like you.
 c. * Him dead could only be shot by the sheriff.
- (35) a. Him in a kimono is difficult to imagine. (Farrell 2005: 111, (34b))
 b. * This metal flat is difficult to hammer.
 c. * Him dead is going to be difficult for the sheriff to shoot.

Canonical small clauses can also be separated from the selecting verb by a PP (Farrell 2005), but the putative small clause in a resultative cannot be:

- (36) a. Try to picture in your mind's eye the mayor in a kimono. (Farrell 2005: 111, (39a))
 b. * Try to hammer in your smithy this metal flat.
 c. * Try to shoot in the street the outlaw dead.

All of this constituency evidence indicates that canonical small clauses and resultatives do *not* have the same syntax.⁵ Of course, Hu & Cheng (2024) could argue that only small clauses that are type *t* can undergo syntactic processes as a constituent, while those that are type $\langle s,t \rangle$ cannot. Leaving aside the fact that this would violate Hu and Cheng's claim that syntax and semantics are autonomous, it does not seem to be correct that only propositions of type *t* can undergo dislocation processes. I already noted above that perception verb complements are temporally dependent and require temporal overlap with the matrix tense. By Hu and Cheng's reasoning, they should then be type $\langle s,t \rangle$, not type *t*. Yet perception verb complements can undergo dislocation processes:

- (37) a. The suspect breaking open the ATM was what she saw on the night in question.
 b. Pavarotti singing *Nessun Dorma* is what she really wants to hear.

Open predicates (not combined with a subject) can often front, for instance in pseudoclefting:

- (38) a. Mostly raw is how she likes her meat.
 b. Black is how she takes her coffee.

The predicate of a canonical small clause can also dislocate by itself, but it is clearly not type *t* (since it is missing its subject); it should be type $\langle e, \langle s,t \rangle \rangle$ in Hu and Cheng's analysis, since its state variable will not have been closed yet:

- (39) a. In a kimono is how I imagine him.
 b. Off my ship is where I want them.

VP-fronting and *though*-preposing also front predicates without their subjects. Of course, they could have the trace of the subject in Spec-VoiceP, as described above. Nevertheless, the event variable should not have been bound by aspect or tense yet, so even if the subject is included, the fronted phrase should still be type $\langle s,t \rangle$:

⁵Farrell (2005) uses constituency data to argue against a small clause analysis of verb-particle constructions. These are also argued in Bruening (2018) to not be small clauses. The constituency facts converge with those of depictive secondary predicates and anaphora in the case of verb-particle constructions as well. The reader can verify that constituency data are also inconsistent with small clause analyses of caused motion constructions and double object constructions.

- (40) a. She said she would feed the cat, and [feed the cat] she did.
b. Intelligent though your cat is, it still can't find its way out of a paper bag.

I conclude that there could not be any general constraint on dislocation limiting it to “semantically complete” phrases. Constituency data therefore clearly distinguish the syntactic behavior of canonical small clauses from that of the putative small clause in a resultative. The conclusion must be that they have a different syntax, contra Hu & Cheng (2024). In particular, canonical small clauses behave as a constituent, while it does not appear to be correct to analyze *the metal flat* as a constituent in *Sam hammered the metal flat*.

7 Conclusion

The point of Bruening (2018) was that the facts of depictive secondary predicates are incompatible with the premise of the small clause analysis of resultatives (and verb-particle constructions, caused motion constructions, and double object constructions). Hu & Cheng (2024) tried to defuse this argument, but they did not succeed. Depictive secondary predicates show that no small clause analysis of resultatives can succeed. The holder of the resultant state must also be a participant in the causing event (in resultatives with a selected object). This is incompatible with a small clause analysis. Modifying such an analysis to make the NP name a participant in the causing event makes that analysis no longer a small clause analysis. This means that small clause analyses are incapable in principle of accounting for the facts of depictive secondary predicates. Secondary predicates absolutely do rule out a small clause analysis of resultatives, contra Hu & Cheng (2024).

Additionally, Hu and Cheng’s proposal to explain the binding facts also fails. All true small clauses do constitute opaque domains for anaphora. Since resultatives do not, they cannot be analyzed as small clauses. In addition, I have shown here that the small clause analysis of resultatives is semantically inadequate, and it is syntactically inadequate, as it is incompatible with the constituency evidence. All of the available evidence converges to argue that the small clause analysis is untenable.

I conclude that Bruening (2018) was correct, and depictive secondary predicates and anaphora do in fact rule out small clause analyses of phenomena like resultatives (and verb-particle constructions, caused motion constructions, and double object constructions).

References

- Adger, David, Alex Drummond, David Hall & Coppe van Urk. 2017. Is there Condition C reconstruction? In Andrew Lamont & Katerina Tetzloff (eds.), *Nels 47: Proceedings of the 47th annual meeting of the North East Linguistic Society*, vol. 1, 21–30. Amherst: GLSA.
- Bjorkman, Bronwyn & Elizabeth Cowper. 2013. Inflectional shells and the syntax of causative *Have*. In Shan Luo (ed.), *Proceedings of the 2013 annual conference of the Canadian Linguistic Association*, 1–11. Toronto: University of Toronto.
- Bruening, Benjamin. 2010. Ditransitive asymmetries and a theory of idiom formation. *Linguistic Inquiry* 41. 519–562.

- Bruening, Benjamin. 2014. Precede-and-command revisited. *Language* 90. 342–388.
- Bruening, Benjamin. 2018. Depictive secondary predicates and small clause approaches to argument structure. *Linguistic Inquiry* 49. 537–559.
- Bruening, Benjamin. 2021. Generalizing the presuppositional approach to the binding conditions. *Syntax* 24. 417–461. doi:10.1111/synt.12221.
- Bruening, Benjamin & Eman Al Khalaf. 2019. No argument-adjunct asymmetry in reconstruction for binding condition C. *Journal of Linguistics* 55. 247–276. doi:10.1017/S0022226718000324.
- Carrier, Jill & Janet H. Randall. 1992. The argument structure and syntactic structure of resultatives. *Linguistic Inquiry* 23. 173–234.
- Charnavel, Isabelle & Dominique Sportiche. 2016. Anaphor binding: What French inanimate anaphors show. *Linguistic Inquiry* 47. 35–87.
- Chomsky, Noam & Howard Lasnik. 1993. The theory of principles and parameters. In Joachim Jacobs, Arnim von Stechow, Wolfgang Sternefeld & Theo Vannemann (eds.), *Syntax: An international handbook of contemporary research*, 506–569. Berlin: Walter de Gruyter. Reprinted in Noam Chomsky (1995), *The Minimalist Program*, Cambridge, MA: MIT Press, 13–127.
- Farrell, Patrick. 2005. English verb-preposition constructions: Constituency and order. *Language* 81. 96–137.
- Geuder, Wilhelm. 2000. *Oriented adverbs: Issues in the lexical semantics of event adverbs*. Universität Tübingen dissertation.
- Harley, Heidi & Hyun Kyoung Jung. 2015. In support of the P_{HAVE} analysis of the double object construction. *Linguistic Inquiry* 46. 703–730.
- Hestvik, Arild. 1991. Subjectless binding domains. *Natural Language and Linguistic Theory* 9. 455–496.
- Hu, Yehao & Gong Cheng. 2024. Anaphora and depictives do not rule out small clause approaches to argument structure: A reply to Bruening 2018. *Linguistic Inquiry* to appear. doi:10.1162/ling_a.00536.
- Huang, C.-T. James. 1982. *Logical relations in Chinese and the theory of grammar*. Massachusetts Institute of Technology dissertation. Distributed by MIT Working Papers in Linguistics, Cambridge, Mass.
- Huang, C.-T. James. 1993. Reconstruction and the structure of VP: Some theoretical consequences. *Linguistic Inquiry* 24. 103–138.
- Kratzer, Angelika. 1996. Severing the external argument from its verb. In Johan Rooryck & Laurie Zaring (eds.), *Phrase structure and the lexicon*, 109–137. Dordrecht: Kluwer.
- Lee-Schoenfeld, Vera. 2004. Binding by phase: (non-)complementarity in German. *Journal of Germanic Linguistics* 16. 111–173.

- Marantz, Alec. 2013. Verbal argument structure: Events and participants. *Lingua* 130. 152–168.
- Pesetsky, David. 1995. *Zero syntax: Experiencers and cascades*. Cambridge, MA: MIT Press.
- Pollard, Carl & Ivan Sag. 1992. Anaphors in English and the scope of the binding theory. *Linguistic Inquiry* 23. 261–303.
- Pylkkänen, Liina. 2008. *Introducing arguments*. Cambridge, MA: MIT Press.
- Reinhart, Tanya & Eric Reuland. 1993. Reflexivity. *Linguistic Inquiry* 24. 657–720.
- Ritter, Elizabeth & Sara Thomas Rosen. 1993. Deriving causation. *Natural Language and Linguistic Theory* 11. 519–555.
- Rothstein, Susan. 2004. *Structuring events: A study in the semantics of aspect*. Oxford: Blackwell.
- Safir, Ken. 2014. One true anaphor. *Linguistic Inquiry* 45. 91–124.
- von Stechow, Arnim & Sigrid Beck. 2015. Events, times and worlds—an If architecture. In Christian Fortmann, Anja Lübke & Irene Rapp (eds.), *Situationsargumente im nominalbereich*, 13–46. Berlin, München, Boston: De Gruyter. doi:<https://doi.org/10.1515/9783110432893-002>.
- Williams, Alexander. 2015. *Arguments in syntax and semantics*. Cambridge: Cambridge University Press.
- Williams, Edwin. 1980. Predication. *Linguistic Inquiry* 11. 203–238.
- Wurmbrand, Susi. 2014. Tense and aspect in English infinitives. *Linguistic Inquiry* 45. 403–447.

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