

To give someone their innocence again¹

Kyle Johnson
University of Massachusetts at Amherst
July 2018

Certain verbs can deploy their arguments in more than one way, and modeling these is a central goal of the syntax-morphology interface. One famous example is the so-called Dative Alternation, illustrated by pairs like (1).

- (1) a. i. Smith sent Jones a letter.
ii. Smith sent a letter to Jones
b. i. Smith gave Jones a letter.
ii. Smith gave a letter to Jones.
c. i. Smith knit Jones a sweater.
ii. Smith knit a sweater for Jones.
d. i. Smith taught Jones some syntax.
ii. Smith taught some syntax to Jones.

The a-examples instantiate what is sometimes called the “double object construction,” or the “double object frame.” And the b-examples instantiate what I will call the “DP+PP frame.” The challenge is to find a theory of how verbs syntactically deploy their arguments so that (i) just these two frames are available for these verbs, and (ii) just the relevant verbs can be expressed with these frames. The need for (ii) can be appreciated by considering that many verbs, some whose meanings are rather close to those in (1), do not have both frames.

- (2) a. i. * Smith donated Jones a fortune.
ii. Smith donated a fortune to Jones.
b. i. Smith envied Jones her fortune.
ii. * Smith envied her fortune to/for Jones.

There have been many attempts to restrict the DP+PP/double-object alternation to just the subset of verbs that display them (see Pinker 1989 for a good overview of the difficulties). At present, it looks like at least one component of the story must

¹ This paper has benefitted from an audience at NYU, from conversations with Jon Nissenbaum, and from a very helpful anonymous reviewer. My whole career has benefitted from Peggy Speas. I’ve been very fortunate to have had her good counsel, strength, and kindness nearby from Graduate School to UMass. It would have been a much less rewarding and fun journey without her. She has been a role-model in ways that go far beyond linguistics. Thank you, my old friend.

involve brute-force learning. There is an arbitrariness to the distinction (compare *donate* with *give*, for instance), that remains irreducible. The focus of this paper won't be on this problem, but it's useful to keep in mind that where the alternation arises seems to be partly arbitrary.

What this paper will focus on is the problem in (i): how does the syntax of argument expression ensure that the relevant verbs can take internal arguments in exactly the double-object or DP+PP frame. The traditional attack (see Chomsky 1985) on this problem devolves it entirely to the syntax. There is a syntactic process that derives one of the frames from the other. Typically, the choice has been to take the DP+PP frame as underlying and derive by syntactic rule the double object frame.² The most modern champion of this view is Larson (1988) (and see Larson 2014). On this view, there is one verb-to-syntax mapping, and a syntax that allows some of those mappings to change in specific ways. The other view is that the mapping between verbal meanings and syntactic structure allow for these two frames – there is no syntactic set of rules that map one frame to the other. One flavor of this approach puts all the information into the lexical specifications for the verbs involved. The theory of the syntax/morphology map on this view is written into the lexicon: each verb says how its arguments can be rendered syntactically and the verbs that participate in the Dative Alternation say they can be rendered in these two ways. Another flavor puts all the information into the syntax. The theory of the syntax/morphology map on this view claims that certain syntactically structured pieces of meaning can be mapped onto a single verb, and these structures give rise to the two frames. On this view, the alternation comes about because the pieces that make map onto the verb can be put together syntactically in the double object and DP+PP way. We have three general directions then: the Transformational view, the Lexical view, and what I shall call the Syntactic Decomposition view. I will argue that there are two sources for the Dative Alternation: one that exploits the Transformational view and one that exploits the Syntactic Decomposition view.

I'll begin by sketching one reason for taking the Syntactic Composition view, i.e., that the verb in the double object construction is composed from a syntactically organized set of morphemes. This reason is essentially that found in Beck and Johnson (2004), but the details will matter for my argument so I will review, and amplify, them.

² Deriving the DP+PP frame from the double object is suggested in Dryer (1986), Bowers (1981), and Hallman (2015), and it will be employed here as well.

1 Small clause analysis

1.1 The view from ‘again’

Beck and Johnson (2004) argued that the double object construction has a hidden phrase inside it, using von Stechow’s (1996) conclusions about the various readings that *again* gets. We’ll start, then, by considering Stechow’s conclusions.

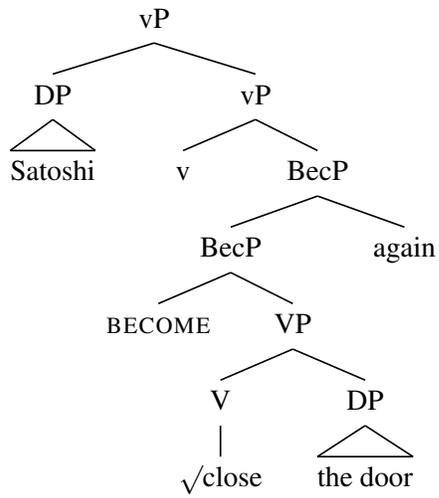
To transpose von Stechow’s argument, which is built upon German data, to English, consider the sentences in (3).

- (3) a. Satoshi closed the door again.
- i. *repetitive*:
= Satoshi closed the door and it had been closed previously.
 - ii. *restitutive*:
= Satoshi closed the door and it was in a closed state previously
- b. Satoshi again closed the door.
- i. *repetitive*:
= Satoshi closed the door and it had been closed previously.
 - ii. *restitutive*:
≠ Satoshi closed the door and it was in a closed state previously.

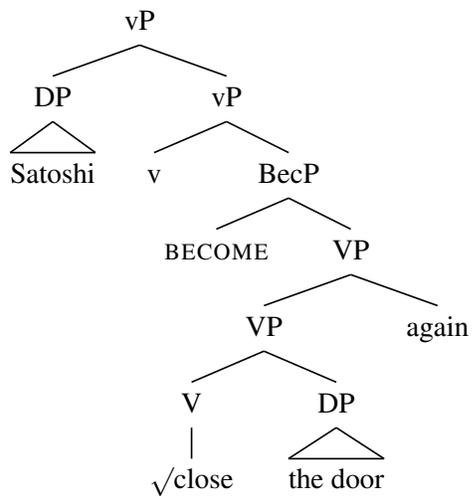
In the restitutive reading of (3a), *again* invokes a reading in which the state of the door being closed is said to happen another time. That reading is lost when *again* is positioned before the VP, indicating that the syntactic position of *again* determines the meaning it can invoke. An explanation for that is to assume that the ambiguity of (3a) – the presence of both the restitutive and repetitive readings – is structural. There is a constituent in (3a) that denotes a state – the state of the door being closed – and this constituent can be modified by *again* when it resides at the end of the VP but not when it resides at the beginning of the VP. The other meaning, i.e. the repetitive reading, arises when *again* modifies a constituent which denotes a change-of-state eventuality, one in which the door becomes closed. A theory that does that embraces the structures in (4).

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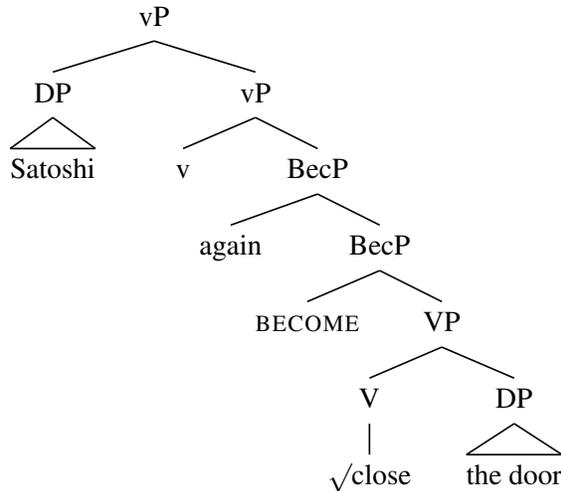
(4) a. Repetitive:



b. Restitutive:



c. Repetitive only:

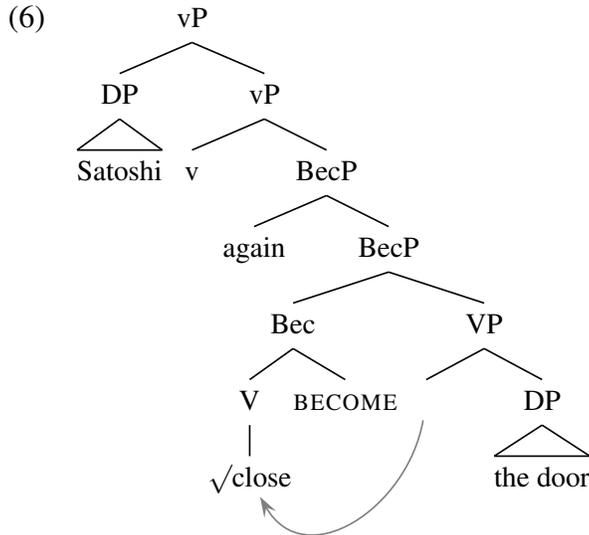


This teaches us that the word *close* arises when (at least) two syntactically independent morphemes are present. In the sketch provided above, there is one predicate, glossed BECOME, that creates from a stative predicate another predicate, one that holds of eventualities in which the state denoted by its complement arises.³ And the other, glossed here as \sqrt{close} , combines with an object to denote the state that holds when that object is closed. The “BecP,” in these parses, then, is a predicate true of events in which the door comes to be closed. When *again* combines with BecP, it is this eventuality which is said to have held previously, leading to the repetitive reading. When *again* combines with the phrase headed by \sqrt{close} , what is said to have held previously is the state of the door being closed, and this corresponds to the restitutive reading. When *again* precedes the constituent made up of both these morphemes it is only able to modify BecP: only the repetitive reading arises.

To achieve this result, we must find the reason that *again* is higher than both VP and BecP when it precedes the verb *close*. We also need a mechanism that tells us how syntactically separate morphemes – like the BECOME and \sqrt{close} in (4) – map onto lexical items like *close*. One proposal is that these morphemes must form an exclusive constituent that can be “spelled out” as a lexical item that expones them. Let’s adopt this principle and assume that it is met by Head Movement in (4) as indicated in (6).

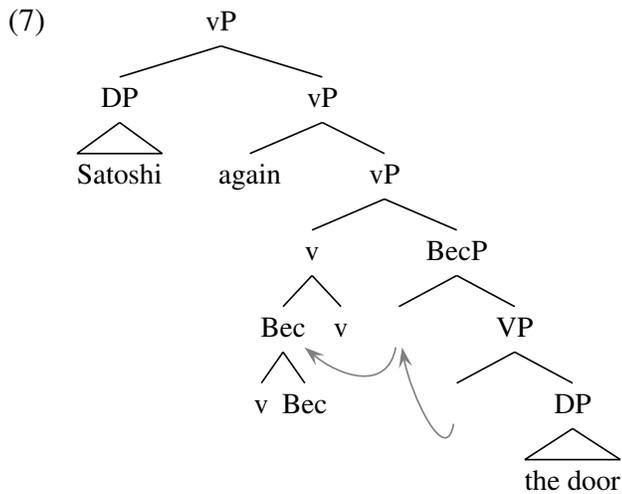
(5) $close \Rightarrow \sqrt{close} + BECOME$

³ There are other possible ways of spelling-out the semantics – the details might not matter for the sketch I attempt here.



This provides an explanation for why *again* can modify nothing smaller than *BecP* when it precedes the verb. Movement must bring \sqrt{close} up to *BECOME* rather than the other way round, and so the position that the lexical item *close* will occupy is the position that *BECOME* stands in. A theory of the syntax-to-morphology interface that has this effect, then, can provide an account for the relationship between word order and meaning that we see in (3).

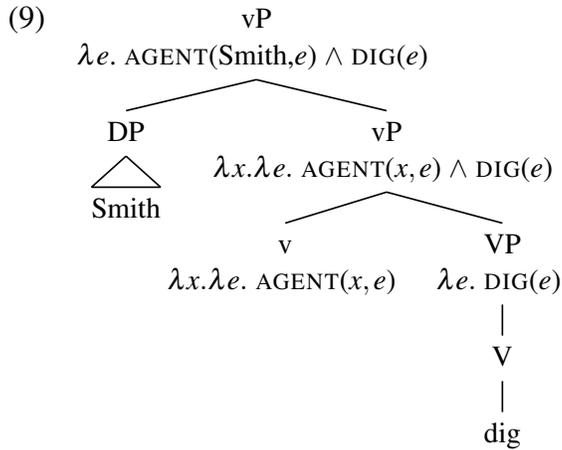
In (4) there is another morpheme responsible for expressing the event description associated with *close*, and that is “v.” On Kratzer’s (1996) view, “v” assigns the θ -role to the subject argument. If we want to make this part of the lexical item *close*, then movement will have to bring the *BECOME* and \sqrt{close} pieces together with “v,” leading to a picture like that in (7).



The position of *again* will have to be higher than in (6), and this will have an effect on the meaning that is associated with the repetitive reading. That meaning difference will be subtle, because the difference in the meaning of *v* and BECOME is subtle. See Bale (2005) for discussion. I will assume throughout that the syntax, and consequent semantics, is as pictured in (7). If that is incorrect, then the conclusions reached here will have to be modified accordingly.

We can assume that the denotation of BECOME allows it to take the phrase headed by $\sqrt{\text{close}}$ as its argument. But on Kratzer’s famous proposal that the denotation of “*v*” is simply a θ -role, something more will have to be said about how “*v*” and BecP compose semantically. In other, simpler, cases, Kratzer suggests that “*v*” composes with its sister by way of a rule she calls “event identification”; (9) illustrates.

- (8) Event Identification
 If $\llbracket \alpha \rrbracket = \lambda x. \lambda e. \alpha(x, e)$ and $\llbracket \beta \rrbracket = \lambda e. \beta(e)$ are sisters,
 then $\llbracket \alpha \beta \rrbracket = \lambda x. \lambda e. \alpha(x, e) \wedge \beta(e)$.



If we were to employ the same idea in (7), *v* would combine with BecP by way of Event Identification to create a predicate of eventualities that are becomings of a closed door with Satoshi as Agent.

Unlike (9), however, there is an intuition that (7) describes an eventuality that has two parts. One of those is an eventuality that Satoshi is the Agent of, and the other is an eventuality that results in the state of the closed door. One way to bring this intuition out is to consider how an instrumental *with*-phrase functions. In (9), a *with*-phrase can introduce the instrument used in the digging event.

- (10) Smith dug with a stick.

And, similarly, a *with*-phrase can introduce the instrument that Satoshi uses to close the door:

(11) Satoshi closed the door with a stick.

But a *with*-phrase cannot introduce an instrument responsible for bringing about the closed-door state alone, as the oddness of (12) indicates.⁴

(12) The door closed with a stick.

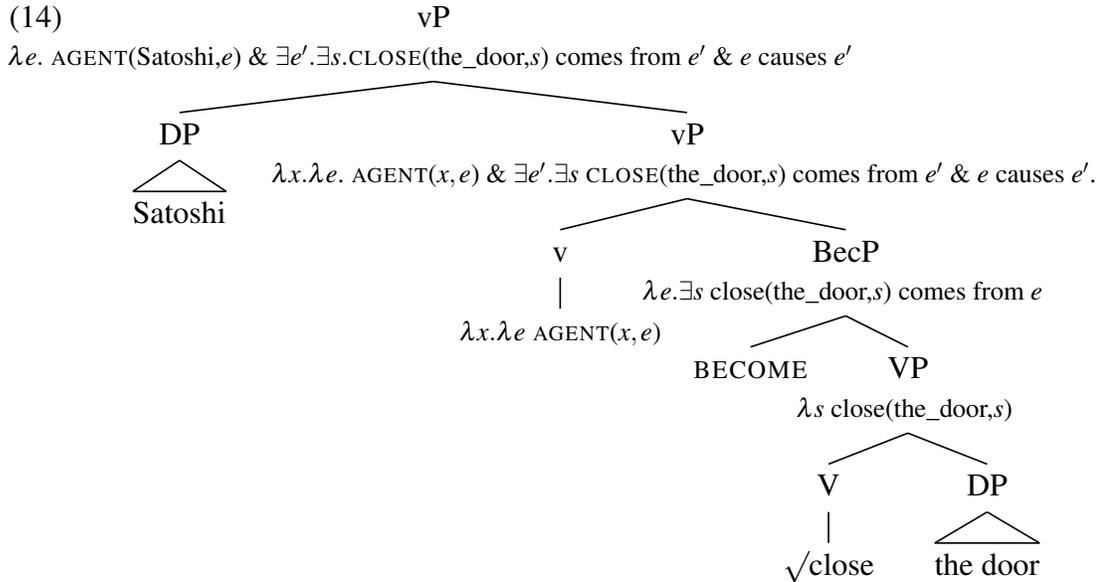
If the difference between (11) and (12) is merely the presence of *v*, then we will want to link an instrument argument with the presence of *v*. One way of doing that is to distinguish eventualities that are of the right kind to have Agents – let’s call these events “actions” – from other kinds of eventualities. On this view, we learn from the difference between (11) and (12) that there is an action eventuality described by (11) but not by (12). If that is correct, we can capture the intuition that there are two non-state eventualities in the denotation of (7) by letting “*v*” include information that converts the eventuality described by BECOME into an action eventuality. We don’t want the eventuality that “*v*” describes to be the same as the eventuality that BECOME describes, and we shouldn’t identify them, as Event Identification does. Instead they need to be related.

A concrete method of doing this is to enrich the inventory of semantic composition rules with one that allows the denotation of *v* to be understood as the cause of the denotation of BecP. I will adopt that view here. Somewhat unconventionally, this rule will have to combine a θ -role, which we can model as a relation between an entity and an eventuality (e.g., $\lambda x.\lambda e \text{ AGENT}(x, e)$), with a simple predicate of eventualities. The more normal view is that causation holds between two predicates of eventualities, one of which causes the other. But if we have the syntax and semantics of *v* right for simpler cases like (9), that won’t do. I’ll adopt the Special Cause rule in (13), illustrated in (14).

(13) Special Cause Rule

If $\lambda x.\lambda e.P(x, e)$ and $\lambda e.Q(e)$ are sisters, where x is of entity type and e is of event type, then their mother can be $\lambda x.\lambda e. P(x, e) \ \& \ \exists e'.Q(e') \ \& \ e$ causes e' .

⁴ (12) is fine when *with a stick* is understood as a comitative, and not an instrument.



See von Stechow (1995), Beck and Johnson (2004), and Pylkkänen (2000, 2008) for discussion.

1.2 The double-objects-are-small-clause theory

To the extent that von Stechow's account of the correlation between the meanings that *again* has and its syntactic position is correct, we have evidence that single lexical items can correspond to syntactically distinct morphemes. A theory of how a verb's arguments are deployed can be traced back to three parts. First, there is the set of morphemes that a lexical item corresponds to. To a certain extent, this will be arbitrary. The lexical item *close* corresponds to $\sqrt{\text{close}}$ +BECOME as well as $\sqrt{\text{close}}$ +BECOME+v, but the lexical item *dig* corresponds unambiguously to v+ $\sqrt{\text{dig}}$.

Second, there is the syntax required to bring these morphemes into one, exclusive, constituent. If, for instance, these morphemes cannot be merged together at the outset as a single constituent, then there must be a syntax that allows them to start out in separate constituents but combine in the syntax. In our examples, the morphemes start out in separate syntactic positions and are brought together by Head Movement. Conditions on Head Movement, then, will partly control how the arguments of these lexical items are projected into the syntax.

And, third, the meanings of the morphemes must permit them to be fit together semantically. More particularly, the meanings of the morphemes must be able to be deployed syntactically in a way that allows them to compose semantically and yet still form an exclusive unit through, say, Head Movement. This is a theory, then,

that models the meanings which lexical items may have with the same machinery that models syntactic phrases. Just like phrasal syntax, it claims that verbs arise only when the syntax and semantics allow a collection of morphemes, and their denotations, to be composed syntactically.

This provides several ways to think about the Dative Alternation. It could be, for instance, that the same set of morphemes which correspond to one of the verbs involved can be deployed in two ways. Or it could be that a single verb corresponds to two different sets of morphemes, in the same way that *close* does. If the same morphemes are involved with both frames, we should expect the denotations to be (roughly) the same in both frames. Whatever differences in meaning there are should all devolve to differences in information structure or pragmatics or other non-denotational processes. If different morphemes are involved, we should expect a difference in the meanings of the two frames, a difference that can be traced back to the difference in the denotations knit together from the contrasting set of morphemes. An alternation which seems to preserve meaning is found with *give* (also: *lend, cede, advance, award, feed, serve, rent, sell*).

- (15) a. Smith gave Jones the gift.
b. Smith gave the gift to Jones.

An alternation that doesn't is found with motion verbs, like *kick* (also: *throw, send, telegraph, hit, toss, hand, hurl, mail, cable*).

- (16) a. Smith kicked the ball to Jones.
b. Smith kicked Jones the ball.

In the DP+PP frame of these verbs, the indirect object can be a location, but in the double object construction it cannot. (See Green 1974, and many subsequent papers.)

- (17) a. Smith kicked the ball to the goal.
b. Smith kicked the ball there.
c. # Smith kicked the goal the ball.
d. # Smith kicked there the ball.

By contrast, the indirect object in neither frame can be a location with *give*.

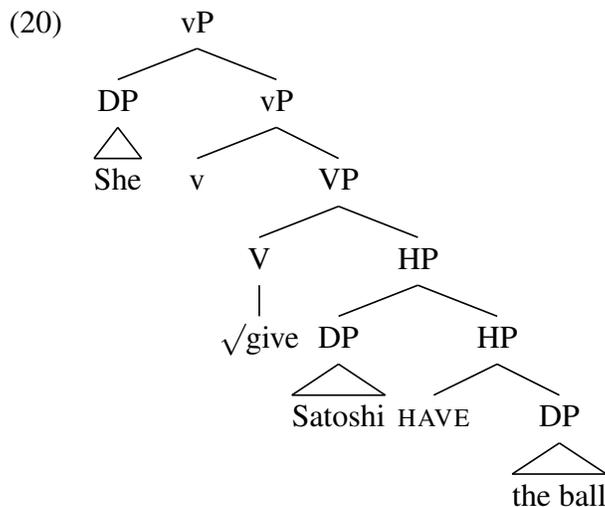
- (18) a. # Smith gave the ball to the goal.
b. # Smith gave the ball there.
c. # Smith gave the goal the ball.
d. # Smith gave there the ball.

Green (1974) argued that the double object frame, for both of these verbs, involves a possession relation between the first and second object. If the truth conditions for possession can be adequately articulated, it could be made responsible for ruling out locations. Note, for instance, that the possession relation that is invoked by the genitive morpheme in English has a similar effect.

- (19) a. # the goal's ball
 b. # there's ball

Let's use HAVE to represent the morpheme that expresses this possession relation. How should this morpheme be deployed in the syntax?

Kayne (1984) famously argues that the double object frame has a structure like that in (20), where HAVE heads a small clause.



He uses this to explain Ross's (1974) discovery that the double object frame does not show up in the nominalizations of these verbs by developing an account for why small clauses parallel to (20) don't show up in nominalizations generally.⁵

- (21) a. the gift of spoons to those guys
 b. * the gift of those guys (of) spoons
- (22) a. the kicking of balls to those guys
 b. * the kicking of those guys (of) balls
- (23) a. her belief that Satoshi is honest
 b. * her belief of Satoshi honest
compare:
 c. She believes Satoshi honest.

⁵ But see Pesetsky 1995 for an alternative.

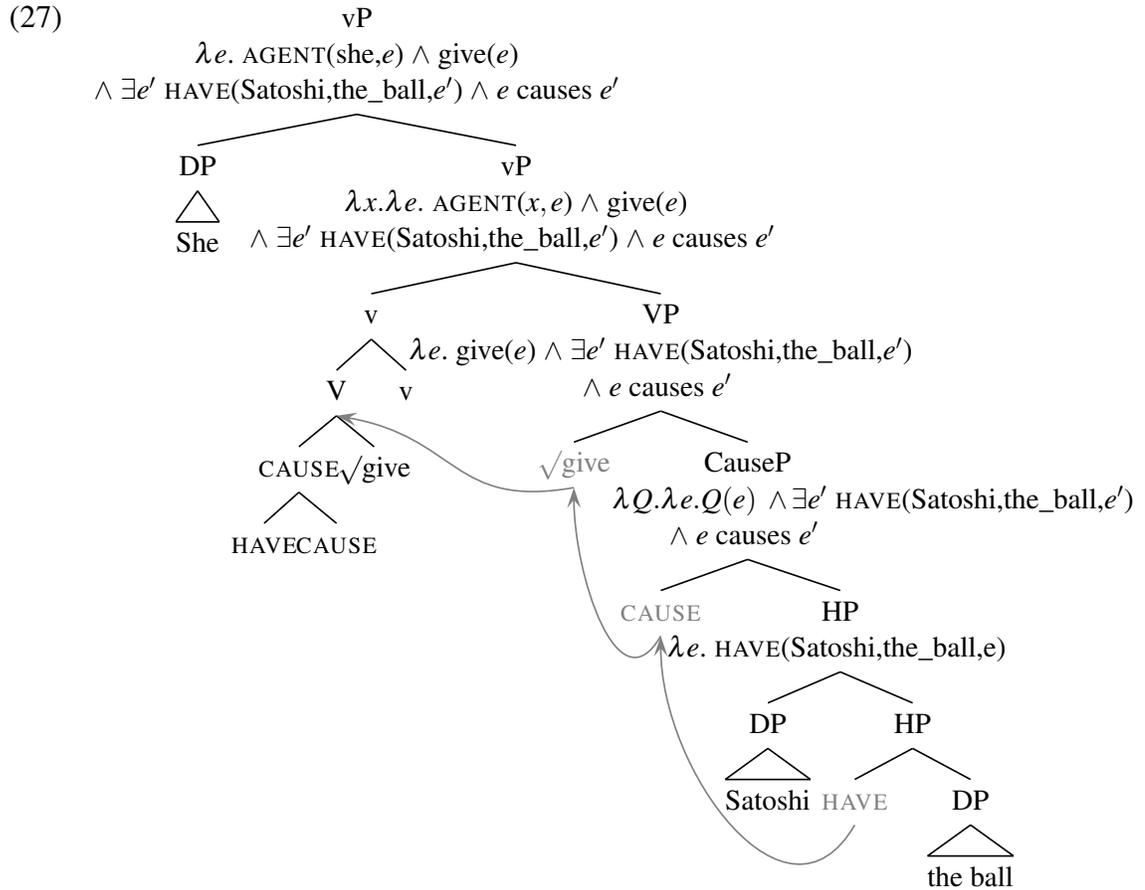
Similarly, the first object in the double object frame behaves like a subject of a small clause in being an island for extraction.

- (24) a. i. Who did you give [_{DP} a story about *t*] to those guys?
 ↑
 ii. * Who did you give [_{DP} a friend of *t*] those stories?
 ↑
- b. i. Who did you send [_{DP} a story about *t*] to those guys?
 ↑
 ii. * Who did you send [_{DP} a friend of *t*] those stories?
 ↑
- (25) a. What did you believe [_{DP} stories about *t*] today?
 ↑
- b. * What did you believe [_{AP} [_{DP} stories about *t*] true]?
 ↑

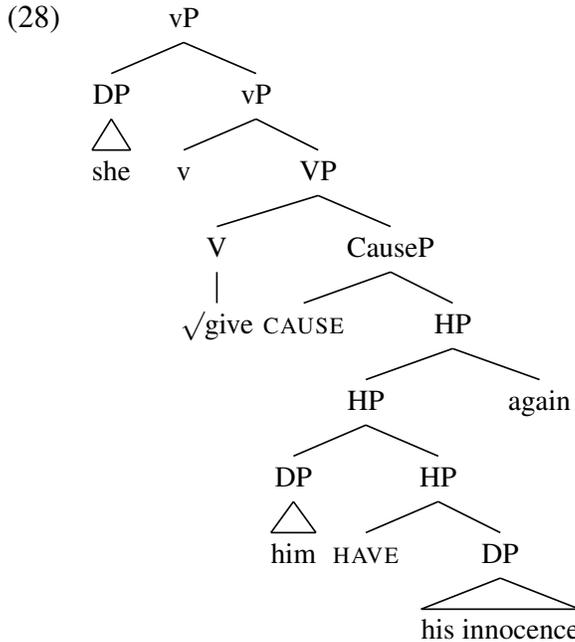
The structure in (20) is very close to providing the right meaning with our present rules. What we need is a way of relating \surd give, a predicate that describes a giving event, with the small clause headed by HAVE, a predicate that describes the state of possession which holds between its two arguments. This is similar to the situation that arises between *v* and \surd close, where we wanted to relate two different kinds of eventualities. As in that scenario, we can use the cause relation to relate the *give* event and the *have* state. In this context, however, I will do so with a (hidden) morpheme, rather than with a rule of composition. This morpheme will relate two predicates of eventualities, as in (26).

$$(26) \quad \llbracket \text{cause} \rrbracket = \lambda P. \lambda Q. \lambda e. Q(e) \wedge \exists e'. P(e') \wedge e \text{ causes } e'.$$

This will produce the representation indicated in (27). (Assume that all instances of Head Movement are semantically vacuous; the heads are semantically interpreted only in the positions they have moved from, shown in shaded font.)



One piece of evidence in support of this decomposition comes from *again*. As Beck and Johnson (2004) argued, the meaning of sentences like that which figures as the title of this paper require that there be a constituent which does not have $\llbracket \text{give} \rrbracket$ in it, but does contain something like the HaveP in (27). (28) illustrates.



A salient interpretation for sentences like *She gave him his innocence again* allows for the state of innocence to be repeated but not the action of giving. That is, this sentence can have the interpretation in (29a) without entailing (29b).

- (29) She gave him his innocence again.
- a. She restored his innocence.
 - b. She regave him his innocence.

(29a) requires that *again* attach to a phrase which describes the state of innocence he is in, but does not include *give*. (28) is one possibility.

If these morphemes, arranged in this way, give rise to the right semantics, how then do we deploy them to give us the DP+PP frame? Larson's (1988) view was that syntactic processes could transform the structure in (20) into a structure that is the DP+PP frame. On his view, that process was something akin to a passive operation. But we might also entertain the idea that it is more like the process responsible for making the dative form of the periphrastic causative of the sort found in Romance languages. In French, for instance, a structure that is pointwise equivalent to (20) – see (30a) – can arise in a frame that is pointwise like the DP+PP frame, namely (30d).

- (30) a. Il fera [vP son enfant boire un peu de vin].
 he will-have [vP his son drink a little of the-wine].
- b. Il fera boire son enfant un peu de vin.
 ↑

In Kratzer (2005), a syntax and semantics of resultatives entirely parallel to the one sketched in (27) is offered. Kratzer notes that her account does not require the direct object be a semantic argument of the higher verb, and that this therefore correctly allows examples such as (33).

(33) She poured the teapot empty.

Teapots are not things that can be poured (witness the oddness of *She poured the teapot*). As expected on the small clause analysis of this construction, (33) is well-formed because the intransitive version of *pour* can be used, resulting in a denotation that could be paraphrased with (34).

(34) $\llbracket(33)\rrbracket \equiv$ She poured with the result that the teapot became empty.

Interestingly, examples like (33) are not well-formed in the double object construction.

- (35) a. *Julie melted Satoshi a puddle.
b. Julie melted Satoshi the ice.

We should expect (35a) to mean something like: Julie melted with the result that Satoshi has a puddle. As this paraphrase makes clear, one problem with that meaning is that *melt* doesn't like to be used intransitively. The contrast between (35a) and (35b) can be related to the difference in (36), if we could find a way of forcing the second object to be an argument of the verbal root.

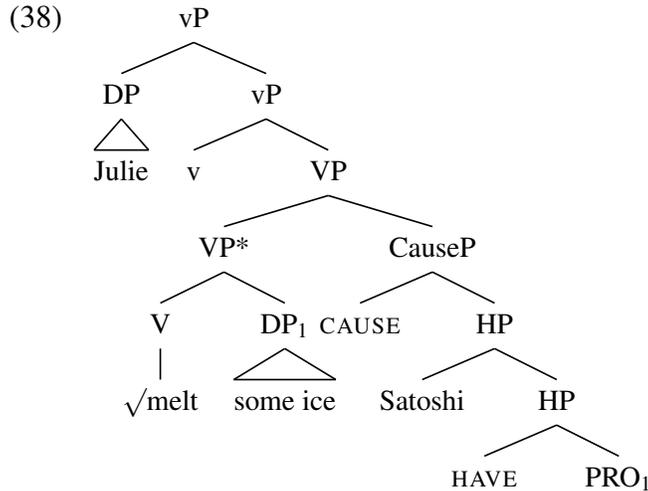
- (36) a. #Julie melted a puddle.
b. Julie melted the ice.

What we aim for, then, is a way of manufacturing denotations for (35) that correspond to the paraphrases in (37).

- (37) a. #Julie melted [a puddle]₁ with the result that Satoshi has it₁.
b. Julie melted [the ice]₁ with the result that Satoshi has it₁.

This isn't achieved in (27).

In Beck and Johnson (2004), we tried to solve this problem by installing a second, anaphoric and silent, argument into the syntax. This could be achieved in the present context with (38).

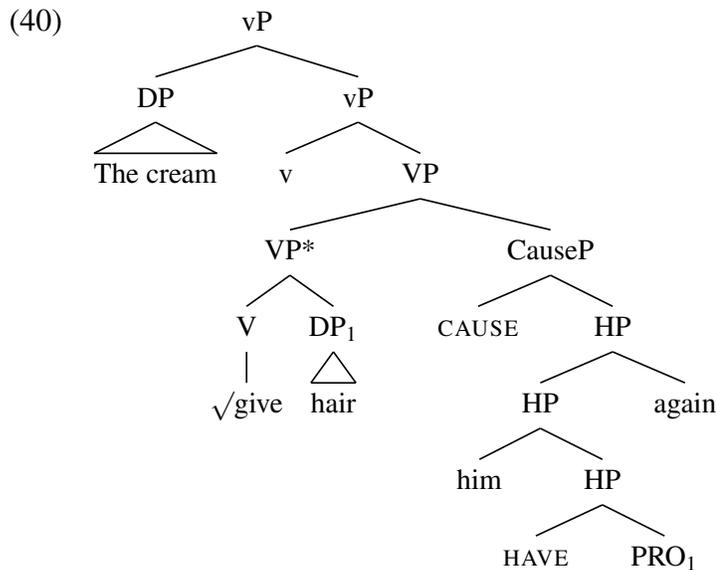


The silent argument, indicated here with PRO, would have to be forced to be bound by the object of the verbal root, ensuring that the entity that is melted is the same entity that Satoshi ends up possessing. What this proposal does, then, is give to each of the predicates related by CAUSE a different object and then relies on an account that will require one of these objects to bind the other. In (38), this will yield a meaning in which Julie’s melting of some ice causes Satoshi to have that ice.

Without a theory that ensures the binding, this isn’t a very attractive solution. It’s also wrong, I believe. To see this, consider (39).

(39) The cream gave him hair again.

Like (28), (39) has a reading in which *again* modifies just the “him have hair” part of the sentence. In a syntax like (38), that interpretation would correspond to (40).



But what (40) delivers is an interpretation like (41).

- (41) She gave hair with the result that Satoshi has it and Satoshi had that hair previously.

Because the constituent that *again* modifies in (40) contains a term (PRO_1) that refers to the hair that is being given, what *again* communicates is that it is that very hair which is being restored to him. That's not the meaning we want. The hair that he had previously doesn't have to be the same hair that is being restored. The constituent that *again* modifies must correspond to "him have hair," since that is the state that (40) requires to have held previously.

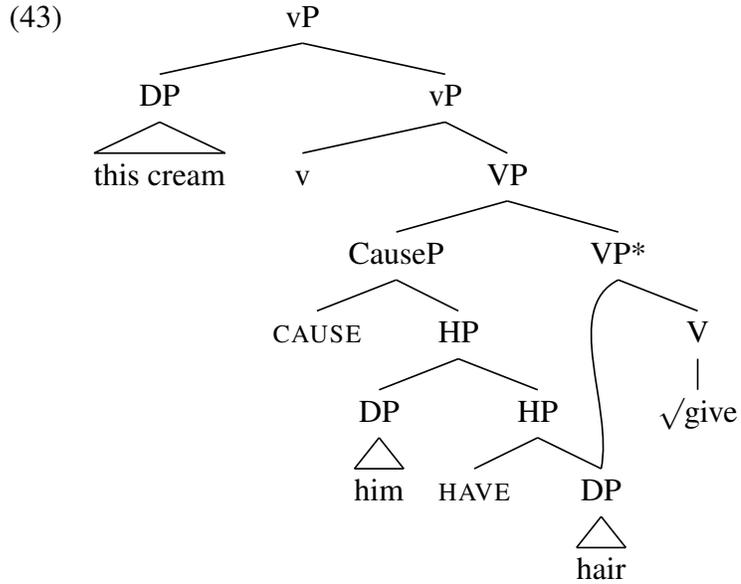
What these considerations show is that we want the same phrase to be both the object of the verbal root and the hidden HAVE predicate. That phrase will refer to, or quantifier over, the same objects that are both the objects of the verbal root and the objects of HAVE. This is something that is also required in the analysis of (some) serial verb constructions, illustrated by the Yoruba example in (42).⁶

- (42) Wón bú omi mu.
they pour water drink
'They poured and drank water.'

(Baker 1989, (2b): 516)

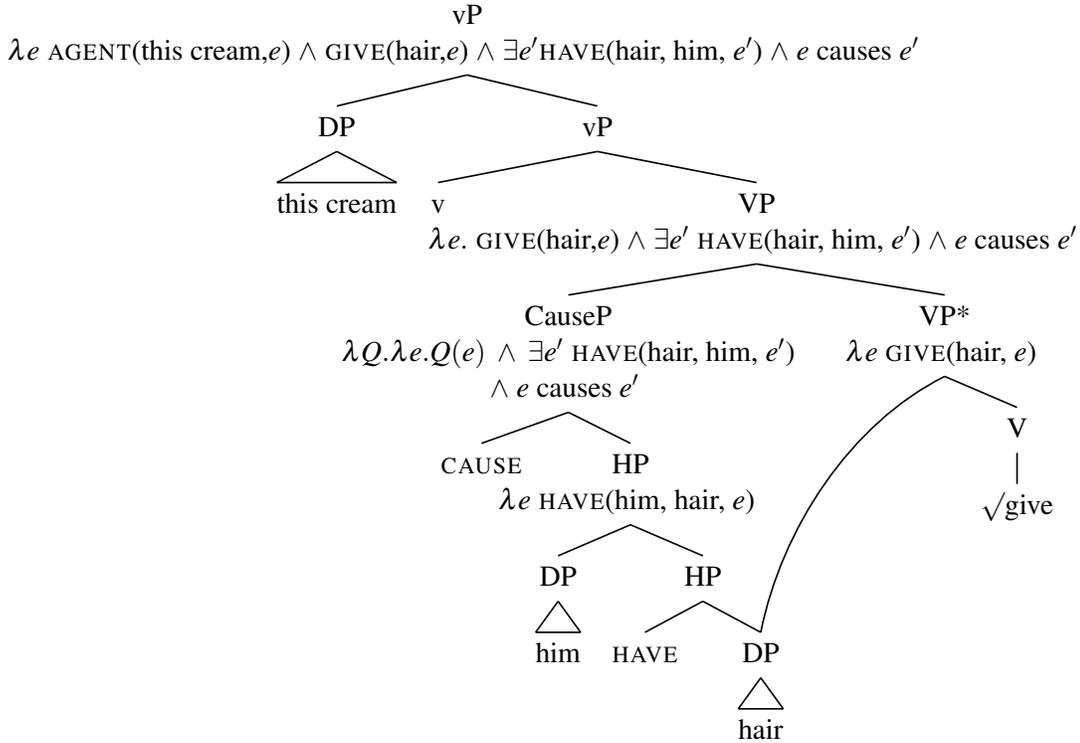
In (42), the object *omi* is somehow the object of both verbs simultaneously. Collins (1997) offers an account of these constructions that is in essence the same as the solution sketched in (38) – there is a second, silent, object in serial verb constructions that is anaphoric on the overtly expressed argument. But Baker (1989) suggests a different direction; he argues for a syntactic representation that makes the object simultaneously an object of both verbs. That is what is needed for our case. Hiraiwa and Bodomo (2008) argues for a way of doing this that relies on phrase-markers being able to give one phrase different mothers, that is phrase-markers which allow for multidominance. Imported to our double-object construction, this would produce representations like (43).

⁶ Baker cites Carstens (1988) as his source. See Carstens (2002) for an accessible version of Carstens' work on serial verbs.



If *again* were introduced in (43) to modify HP, it would produce the correct reading, one in which what has happened previously is that “he has hair.” This syntax needs no special theory ensuring anaphora between the object of one predicate and the anaphoric object of the other, as there is no anaphoric object. Our composition rules will (probably) produce the right interpretation.

(44)



There are some niceties about the referential force of the shared object to be worked out. When this object is a referring expression, how it combines with the two predicates is trivial. Each predicate's object will, as desired, refer to the same thing. But when the shared object is quantificational, as it arguably is in (44), we will have to find a way of ensuring that the things it quantifies over are evaluated relative to each of the predicates differently. In the case of the bare plural in (44), for instance, this could be achieved by combining the object with the predicates by way of Pseudo-Incorporation (see Dayal 2011) or the Restrict rule in Chung and Ladusaw (2004). This will allow (probably) the hair that is the object of HAVE to be different than the hair that is the object of $\sqrt{\text{give}}$. There are details here that require investigation.

What remains is to produce from (44) a representation that allows the lexical item *give* to be inserted. Recall that lexical items are matched to constituents that contain the relevant morphemes those lexical items express, and nothing else. For (44), this means the syntax must allow for $\sqrt{\text{give}}$, HAVE, CAUSE, and v to be combined into a single constituent. Up to now, that has been achievable by invoking successive cyclic head movement. In (44), however, a less orthodox application of head movement must be used, one that moves $\sqrt{\text{give}}$ and CAUSE to combine even though neither is in a c-command relation with the other. This requires widening the types of geometries that head movement is possible in, and that could open up

problems. I will assume that this is achieved here by moving $\sqrt{\text{give}}$ to v independently of the movement to v by the other morphemes. That is, I'll assume that HAVE joins with CAUSE, and they together move to v – a typical successive cyclic derivation. And $\sqrt{\text{give}}$ does its own independent movement to v . This will allow all these morphemes to Head Move in the normal way – to a c -commanding head – and to form thereby the constituent that gathers together the morphemes that get exponed by *give*.

If no problems emerge from allowing head movement to apply in the way necessary, and the issues concerning non-referential objects work out, this seems to me to be a viable analysis of the double object construction for verbs like *give*, *lend*, *serve*, etc.

But a different account is required for motion verbs.

2 The Small clause lost

We've already noted the dative alternation with motion verbs doesn't preserve meaning in the same way that it does with *give* and its kin. Unlike with *give*, the PP in the DP+PP frame marks a Location, not a Goal, or in the analysis here: a Possessor.

- (45) a. Smith kicked the ball to the goal.
b. * Smith kicked the goal the ball.

On a framework in which the meanings of these verbs decomposes into syntactically independent morphemes, this means that the morphemes that make up the DP+PP frame are not the same as those that make up the double object frame with motion verbs. The dative alternation should be modeled as one lexical item mapping onto two different groups of morphemes.

But there are other differences between motion verbs and the *give*-class. One of those is that the motion verbs don't have the meaning we would expect in their double object frame if they are put together in the way that (44) indicates. Because the Simple Cause Rule connects the meaning of the VP* with the meaning of the small clause, it makes a denotation whose truth conditions require that the predicate denoted by the small clause result from the event described by the higher verb. This correctly makes sentences made from *give* entail that the "Goal," or Possessor, come to have the direct object. This is what makes the sentences in (46) contradictions.

- (46) a. Smith gave Jones a book, but Jones didn't get it.
b. Smith gave a book to Jones, but Jones didn't get it.

This doesn't happen with motion verbs, however. In neither of their frames do they entail that the Goal or Location receive the direct object.⁷ There is no contradiction in (47).

- (47) a. Smith kicked Jones the ball, but Jones didn't get it.
b. Smith kicked the ball to Jones, but Jones didn't get it.

It's not just that the motion verbs and the *give*-verbs differ in the meaning of their DP+PP frame then. They differ in the meaning of their double object frame as well.

Accompanying this difference is the fact that most English speakers I have consulted do not find the same kind of meaning for the double object frame of motion verbs when combined with *again* that we found in (28) and (39). The sentence in (48), for example, can only communicate that there was a previous sending event involving Jones and a liver.

- (48) Smith sent Jones a liver again.

It cannot describe a situation in which a liver was sent to Jones just once, but that this liver-sending resulted in Jones once again having a liver. (Imagine, for instance, that Jones received a liver from Smith to be used in Jones's liver-transplant.) We do not see evidence from *again* for the HaveP that makes up the meaning of VPs with *give*.

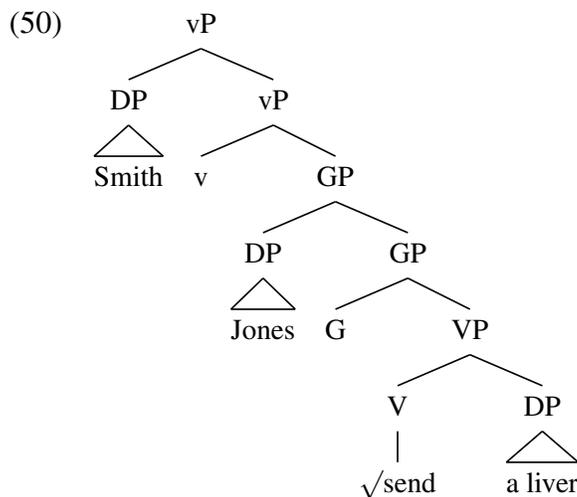
The semantics doesn't lead us to give to the double object frame of motion verbs a small clause structure. But the syntax still does. Kayne's criteria for ascribing a small clause structure to the double object construction of *give* hold for motion verbs as well. Like the subject of a small clause, the first object of the double object frame is an island for extraction with motion verbs and resists being an object in a nominalization of a motion verb.

- (49) a. * who did you kick [DP a friend of] the ball?
 ↑
 compare:
b. who did you kick [DP a friend of]?
 ↑
c. * the kick of a friend (of) a ball
d. the kick of a ball to a friend

These are just the facts that suggest a small clause structure for the double object frame.

⁷ See Hovav and Levin (2008) for the point that this is one difference that distinguishes these verb classes, and for an argument that it should lead us to conclude that the semantic make-up of these verbs differs in a way that is independent of the dative alternation.

This contrast between motion verbs and verbs like *give* presents an interesting problem. Perhaps we should abandon the view that contrasts like (49) support a small clause structure and find some other explanation, one that can be applied to both the *give* and *kick* double object frames. That would allow us to then look for other ways of organizing the arguments in the double object frame for motion verbs. Or perhaps we could find another way of organizing the morphemes that make up a motion verb in its double object frame, but one that doesn't have a geometry to support a place for *again* to give rise to the meanings available for *give*. A popular hypothesis along these lines is (50), where "G" is a morpheme that causes its subject argument to be a Goal.



See Bruening (2010b,a), among others, all inspired by Marantz (1984).

A fundamental problem for all such accounts, however, is understanding how to locate where the "switch" is that allows a language to have the double object construction. If the syntax we give to the double object frame for *give* and *kick* is too different, we run the risk of claiming that they are independent. We could end up making it accidental that English has a double object frame for both types of verbs. If there is one property of English that is responsible for its ability to house the double object frame, then that property should be present in each of the instances of that frame, no matter what the verb is. I cannot see what syntactic or semantic property is common to (44) and (50), and so I cannot see what would make these structures unavailable in languages that don't have the double object construction.

Is there another way of thinking about how to analyze the double object frame that captures the differences between *give* and *kick*, and yet still preserves a common property to which we can credit the ability to have it? Because the evidence for (44) being a correct model for *give* seems to me compelling, I will sketch a way of

analyzing the double object frame for *kick* that brings it close enough to (44) to give a unified treatment of the double object construction.

Let's start by considering the difference between (46) and (47). The double object frame for *give* entails that the first object comes to possess the second, whereas the double object frame for *kick* doesn't. This contrast requires that there be a difference in the meaning of the verbs that make these two different double objects. A suggestion in Beck and Johnson (2004) is to give the double object frame an additional morpheme that weakens the causative relationship. Our specific proposal was to use the progressive operator, which is responsible for weakening the entailments of plain action sentences. Informally, we can define the progressive operator with (51), which will weaken the entailments of *She crossed the street* to (52).

(51) $\llbracket \text{PROG} \rrbracket = \lambda P. \lambda e. \text{if things continue normally, } P(e)$

(52) $\llbracket \text{She was crossing the street} \rrbracket \approx \text{if things continued normally, she crossed the street.}$

If PROG is put within the small clause of (44), it will make the eventualities that are caused by the eventualities described by the VP to be ones which “normally” result in a HAVE relation between first and second object. Because the progressive operator is unable to apply to stative eventualities, this solution requires that the small clause not be a simple stative possession relation. The suggestion in Beck and Johnson (2004) is that the small clause also contains BECOME. Putting this all together gives to (47a) the representation in (53).

of the small clause. They are syntactically the same, and their semantic composition makes use of the same family of rules. We can even give the same account of the dative alternation for both classes of verbs. Recall that we took the view that the DP+PP frame is derived from the double object frame for the *give* class by the set of operations that produce Romance type periphrastic causatives. We can assume that the same set of operations are able to derive from (53) the DP+PP frame for motion verbs, when the PP hosts a Possessor:

(54) Smith kicked Jones a ball \Rightarrow Smith kicked a ball to Jones

However, when the *to*-phrase names a Location, we must do something different. This is where need for a different set of morphemes is required. Motion verbs must be able to lexicalize a different set of morphemes.

To see one way this could happen, consider first the distribution of Locative *to*-phrases. We can assume that Locative *to*-phrases are able to be added to motion verbs, even intransitive ones that don't participate in the dative alternation.

- (55) a. Smith went to Chicago.
b. Smith ran to the goal.
c. It rolled to the edge.

By contrast, verbs that have a transactional meaning like those in (56) cannot combine with a Locative *to*-phrase.

- (56) a. * Smith saved to the bank.
b. * The money compounded to the financial institution.

There are constraints on the distribution of Locative *to*-phrases, then, that are independent of the verbs that participate in the dative alternation. Let's assume that these constraints are responsible for blocking Locative *to*-phrases from combining with *give*-type verbs.

The constraints on Locative *to*-phrases must also block them from occurring with motion verbs in their double object frame, as (57) indicates.

- (57) a. * Smith kicked Jones the ball to the goal.
b. * Smith sent Jones a letter to the office.
c. * Smith threw Jones the ball to home plate.

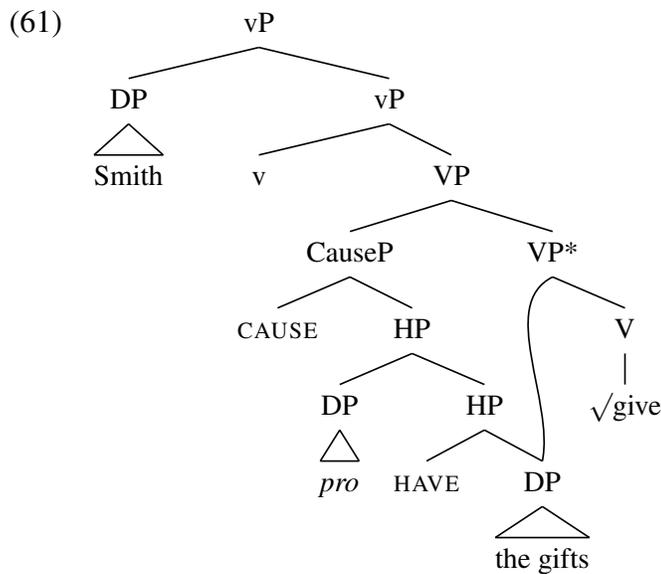
I don't see how to explain this constraint, and, worryingly, nothing I am proposing here seems to shed light on it. I regard this as a lacuna.

- (58) Lacuna
A locative *to*-phrase cannot compose in a double object frame.

Note next that both *give*-verbs and the motion verbs have a simple transitive use.

- (59) a. Smith gave the gifts.
 b. Smith lent the money.
 c. Smith served the food.
 d. Smith advanced my paycheck.
- (60) a. Smith kicked the ball.
 b. Smith threw the javelin.
 c. Smith sent the letter.
 d. Smith wired the money.

We can assume that in the case of the *give* verbs, these invoke the double object frame with an implicit argument in the Goal/Possessor position. If *pro* represents the implicit argument, (59a) could have the representation in (61), for instance.

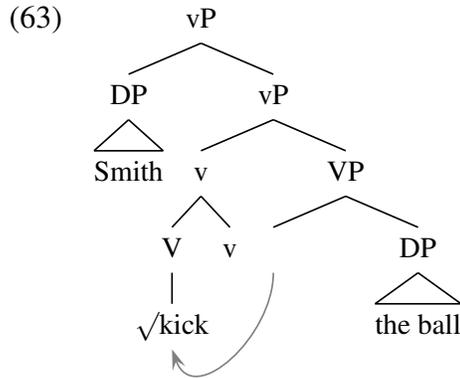


The transitive use of motion verbs, however, cannot have a similar structure since they can combine with Locative *to*-phrases.

- (62) a. Smith kicked the ball to the goal.
 b. Smith threw the javelin to the front yard.
 c. Smith sent the letter to the office.
 d. Smith wired the money to the bank.

These would be ungrammatical because of Lacuna if they involved the double object frame. Instead, the transitive use of these verbs must lexicalize some other set

of morphemes. They could correspond to structures like (63), where only the verbal root and *v* are involved.



This account allows us to link the ability of a language to have the double object construction with whatever factors are necessary to license the particular small clauses in (44) and (53). See Beck and Snyder (2001b,a) for a suggestion that would tie it to the semantics, and Snyder (1995) for a suggestion that would tie it to the syntax/morphology interface.

But (53) still predicts that the double object frame for motion verbs should have the same range of meanings when modified by *again* that the double object frame for *give* does. In both, there is a HaveP which *again* should be able to modify, leading to a reading in which only the HAVE relation is presumed to have occurred previously.

One assumption about the syntax which is necessary for achieving this reading in the case with *give* is that the movement of the morphemes that make up the lexical item *give* is semantically vacuous. For instance, even though CAUSE moves to $\sqrt{\text{give}}$ in our syntax, semantically it behaves as if it hadn't moved. This isn't a surprising feature of the account; head movement of verbs is often semantically vacuous. But there are instances of head movement which have been argued to have semantic content, and that is one way of thinking about why *again* yields different results with motion verbs. Keine and Bhatt (2016) provide compelling reasons to think that in the German "long-passive," there is an instance of head movement which is semantically contentful, and which has an effect on how *again* is interpreted. In the German long-passive, an argument of a verb embedded in an infinitival complement takes on some of the attributes of the object of the embedding verb when that verb is passivized. For instance, passivizing the root verb in (64a) can result in (64b), where the object of the embedded infinitival is marked with Nominative Case, as would be appropriate for the subject of the passivized verb.

- (64) a. Gestern hat er nur einen einzigen Traktor zu reparieren
yesterday has he only a single tractor.acc to repair
vergessen.
forgot
'Yesterday, he forgot to repair only one tractor.'
- b. Gestern wurde nur ein einziger Traktor zu reparieren
yesterday was forgotten to repair only one tractor.
vergessen.

'Yesterday, it was forgotten to repair only one tractor.'

(Keine and Bhatt 2016, (10a,c): 1454)

An interesting feature of long passives is that, though constituency tests confirm that there is an embedded infinitival clause in them, scope phenomena seem to be blind to its existence. For instance, Bobaljik and Wurmbrand (2005) discovered that the nominative Case-marked object cannot scope beneath the root verb. In (64b), for instance, *nur einziger Traktor* can only scope above *vergessen*. This is true even when constituency tests indicate that the object is within the embedded infinitival. Takahashi (2010, 2012) found that in the parallel constructions in Japanese, it's not just the nominative Case-marked argument that cannot scope beneath the embedding verb, but all other arguments of the infinitive are similarly constrained. This is true for German as well, as Keine and Bhatt (2016) show.

- (65) Erst gestern wieder wurde der Fritz nur einem einzigen Studenten
just yesterday again was the Fritz.nom only a single student.dat
vorzustellen vergessen.
to.introduce forgotten
'Just yesterday it was forgotten to introduce Fritz to only one student.'

(Keine and Bhatt 2016, (13b): 1456)

The indirect object *nur einem einzigen Studenten* in (65) is only able to outscope *vergessen*. Interestingly, Keine and Bhatt (2016) show that adverbial modifiers are also blocked from modifying the embedded infinitival in long passives, including the German equivalent of *again*, viz. *wieder*.

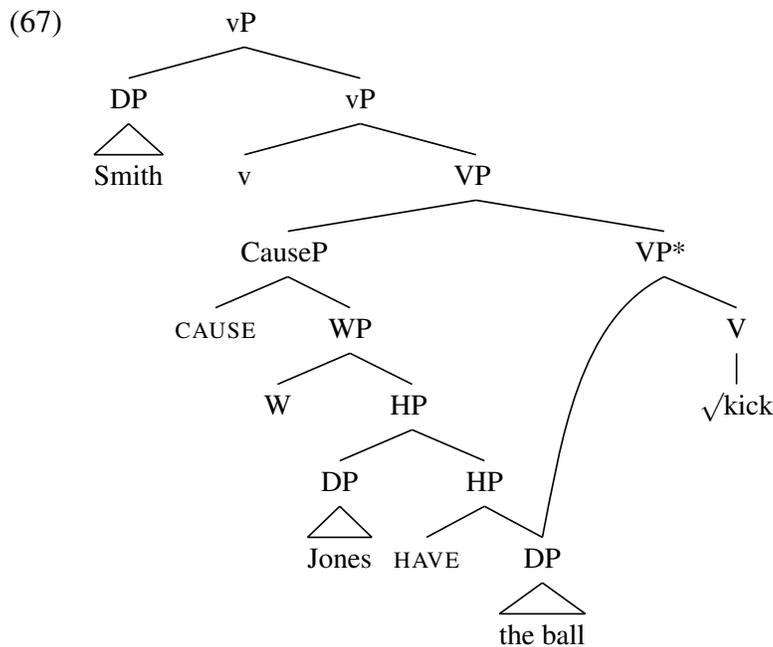
- (66) Gestern wurde der Schrank wieder zu schliessen vergessen.
yesterday was the closet.nom again to close forgotten
'Yesterday, it was forgotten to close the closet again.'

(Keine and Bhatt 2016, (23a) 1463)

The only meaning (66) has is one in which *wieder* modifies the higher verb: it requires that there be a previous forgetting event, not that there be a previous closed state or event bringing about that closed state.

The account Keine and Bhatt (2016) give uses the idea that the infinitival verb head moves and incorporates into the higher verb. In the context of the long passive, however, this instance of head movement is not semantically vacuous. Instead, the two verbs form a complex predicate and bind a variable in the position of the lower, infinitival verb. That variable has the semantic value of the complex predicate formed in the higher position, and this causes that complex predicate to start composing with the other material in the clause from that lower position. This essentially “hides” the phrase that the lower infinitival verb makes, preventing it from being a target for scope relations. The details would take us too far afield here. Instead, I’ll sketch how this idea would apply to the double object frame of motion verbs.

I’ll start by simplifying the structure associated with the double object frame of motion verbs. I’ll use “W” to represent the morpheme, or morphemes, that weaken the causal relation; if (53) is correct, “W” corresponds to PROG+BECOME. This step simplifies (53) to (67).



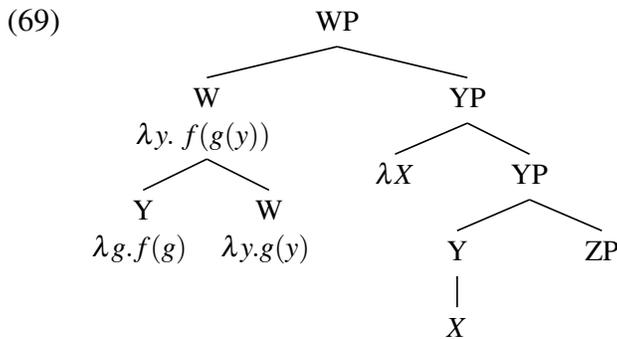
The key ingredients to this parse is that it captures the syntactic facts that suggest that the two objects are part of a small clause and it gives us a way of capturing that the second of those objects is shared by the higher verb and the predicate that heads the small clause. Recall that we derive the head that contains the morphemes which are to be matched to the relevant verb – here *kick* – by Head moving the root – here $\sqrt{\text{kick}}$ – to *v* and independently move *HAVE* and *W* to *v*. These instances of Head

Movement are in-line with standard assumptions about Head Movement, but, as we will see, they require that the Head Movement be semantically vacuous.

In Keine and Bhatt (2016), the model of semantically contentful Head Movement involves taking a head, joining it with another c-commanding head, forming a complex predicate of those heads, and then causing that complex predicate to bind a variable in the lower position. They propose that the complex predicate is formed by composing the meanings of the two verbs by function composition, given in (68).

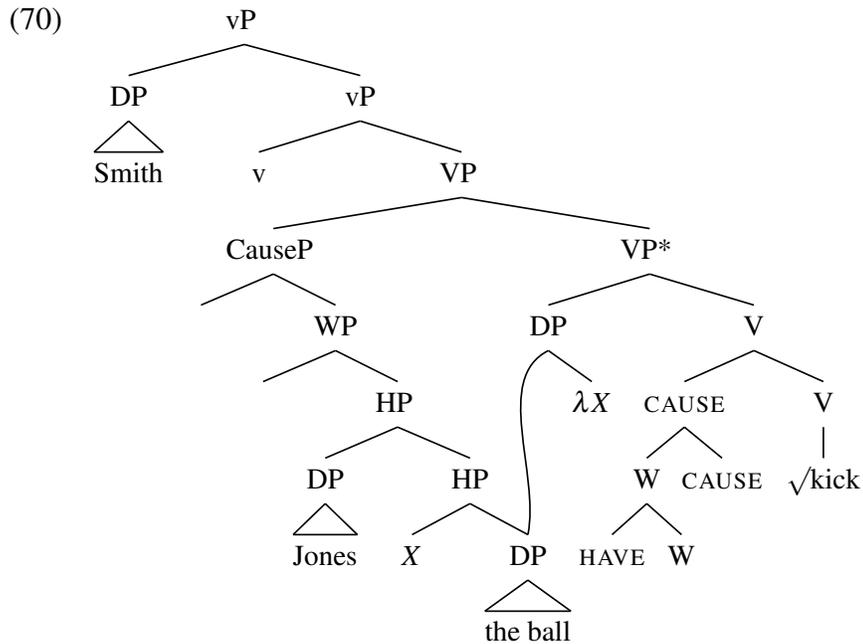
(68) Function Composition
 $(C \rightarrow D) \circ (A \rightarrow (B \rightarrow C)) := (A \rightarrow (B \rightarrow D))$

Schematically, then, their proposal uses Head Movement to form structures like (69).



Note that the Head Movement rule inserts a λ -operator in a position that brings about the binding of the variable ($=X$) by the complex predicate formed by Head Movement.

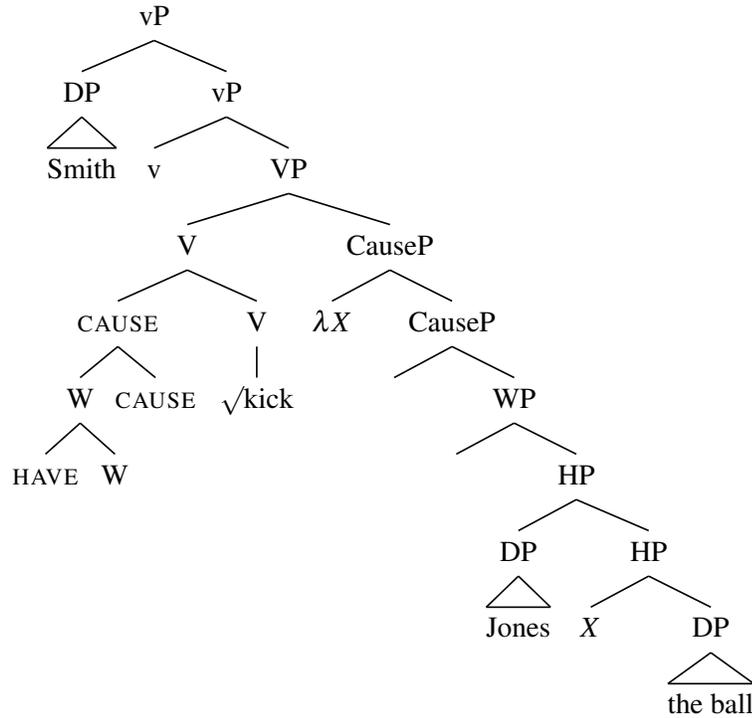
Let's consider what would happen if we allowed for this kind of Head Movement to bring together HAVE, CAUSE, W, and $\sqrt{\text{kick}}$ in (67).



Because $\sqrt{\text{kick}}$ does not c-command any of the other heads, it will not be able to bind the variable left in the lowest of the head positions that are collected together by Head Movement. That is, the λ -operator will not be able to be inserted in a position that relates the variable and the complex head that is intended to bind it. The multidominant architecture that is used in (67) to capture the object sharing property of the double object construction does not allow for semantically contentful Head Movement.

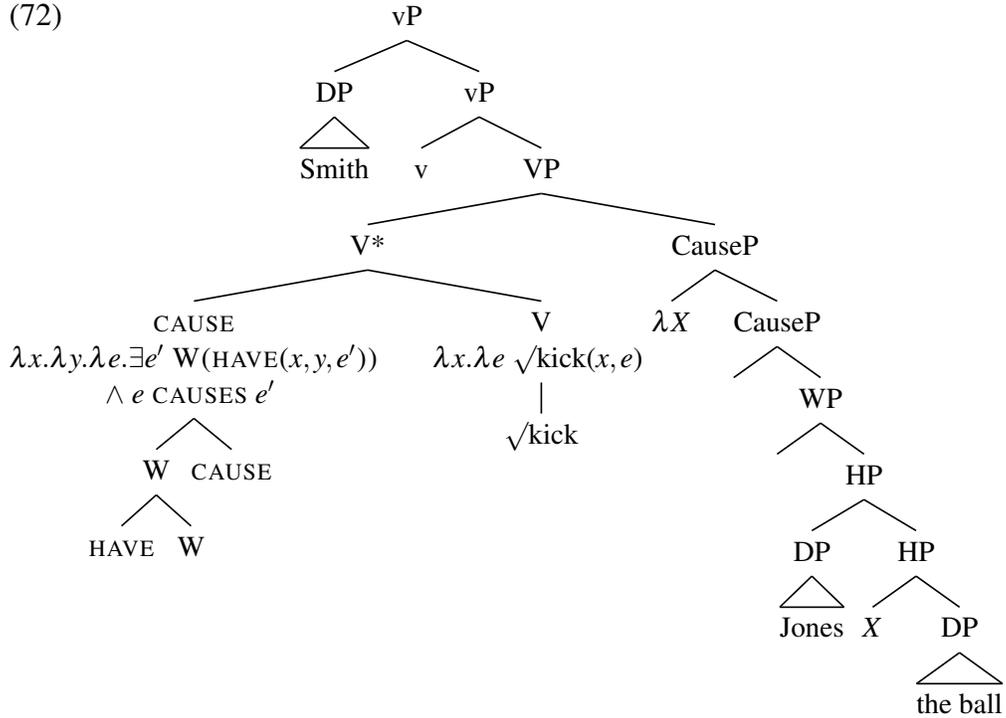
What we will see now is that the object sharing property can be captured without this syntax in cases where Head Movement is semantically contentful. So, in scenarios where the double object construction involves motion verbs, the small clause does not need to invoke multidominance. Our structure is (71).

(71)



The function composition rule that Keine and Bhatt use can put together the HAVE, W and CAUSE parts of the complex, but not the $\sqrt{\text{kick}}$ part. Using just the function composition rule will deliver the denotations indicated for the complex verb in (72).

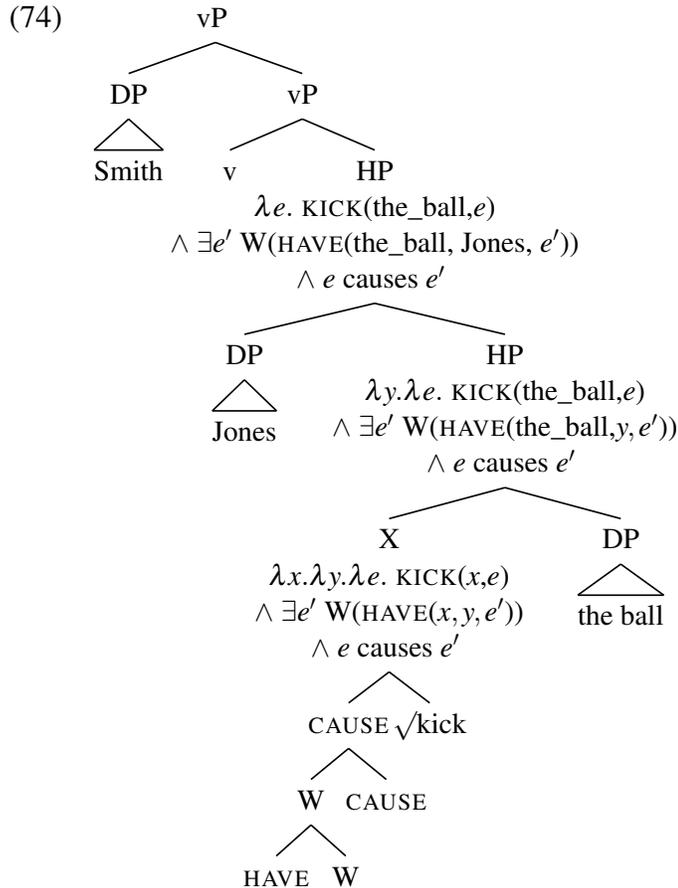
(72)



To combine the Cause and V parts of V^* , we use Predicate Modification⁹ and Event Identification, which produces (73).¹⁰

⁹ If $[_A \lambda x.P(x)]$ and $[_B \lambda y.Q(y)]$ combine to make C , then $[[C]] = \lambda x.P(x) \wedge Q(x)$.

¹⁰ Recall that "W" stands for the morpheme or morphemes that weaken the causal relation between HP and the higher root. If we follow Beck and Johnson (2004), this involves both a progressive operator and a become operator. On that view, then, the denotation of V^* would be:
 $\lambda x.\lambda y.\lambda e. KICK(x,e) \wedge \exists e' PROG(\exists s HAVE(x,y,s) \text{ comes from } e') \wedge e \text{ causes } e'$.



Note that (74) shows how the object sharing property is captured by letting λx bind the same variable in both the $\sqrt{\text{kick}}$ and HAVE predicates.

(74) also shows, however why in these cases of the double object constructions with motion verbs, modification by *again* do not give rise to the same kind of restitutive reading that we find in the double object constructions of *give*. There is no constituent in (74)/(73) to which *again* can be placed and modify just the HAVE relation without also modifying the KICK relation. This is how the relevant restitutive reading in the double objects of the *give* type verb are manufactured.

If we assume, then, that the motion verbs use a Head Movement rule that is semantically contentful – one that uses the function composition and binding method that Keine and Bhatt (2016) have developed – then we can explain how roughly the same syntactic representations give rise to different behavior with *again* in the *give* class and the motion verb class of double object. We can credit the the availability of the double object construction in some languages, and with some verbs, to the ability of those verbs in that language to find themselves in the small clause structures that (71) and (44) illustrate.

3 Conclusion

My goal at the outset was to explore how to create a theory of argument expression that permitted the verbs which allow it to have just the DP+PP and double object frames for their internal arguments. I haven't reached that goal, but I hope I've taken some steps in its direction. I've tried to show how it might be possible to model the relationship between the double object and DP+PP frame so that it preserves the meaning of those frames for verbs like *give*, while still allowing the subtle differences in meaning these frames get for verbs like *kick*. A driving force behind my proposals is to give one structure for the double object frame, even though its meanings seem to vary. That makes the whole class of double object constructions travel together, and allows therefore for a way of letting a language either have all of them or have none of them. This, I believe, is the correct typology. That structure are the small clauses in (71) and (44). The difference in meanings for the two classes of verbs examined here devolve to (i) a different set of morphemes that make up those small clauses and (ii) a different semantics, and consequent syntax, for the Head Movement process that combines those morphemes.

If these steps are in the right direction, they leave many open questions. Is there a correlation between the set of morphemes that make up the double object constructions for the motion verbs and the idea that those heads combine differently semantically as well? Is there a way of closing the class of morphemes that can be used to form the double object construction? Is there a way of forcing the object sharing that characterizes these constructions? Does this framework extend to the wider class of double object verbs, including *promise* and *deny*, whose semantics is considerably different? I don't know that there are answers to any of these questions.

It's also not clear how to fit the proposals here to the observation that the *give* type verbs do apparently have a shift in meaning with respect to their subject argument in the DP+PP and double object frames.¹¹ Oehrle (1976) noted that the subject of a double object *give* need not be an Agent, but that the subject of a DP+PP frame *give* must.

- (75) a. Contact with poison ivy will give you a rash.
b. # Contact with poison ivy will give a rash to you.

This is unexpected on the account offered here and, with the open questions listed above, holds the fate of the suggestions in this paper.

¹¹ My thanks to the anonymous reviewer who reminded me of this important fact.

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