A Constructionist View

Last week, I sketched a prevalent view that the argument structure of the frames in the dative alternation have different argument structures. The Green-inspired idea is that paraphrases for those argument structures is something like what (1) illustrates.

(1) a. i. X V Y to Z
    X makes Y go to Z by Ving it
    ii. X V Y for Z
    X makes Y on behalf of Z
b. X V Z Y
    X causes Z to have Y by Ving Y

To spell out these paraphrases, and sharpen them so that they are correct, means finding the correct predicates that name the relations among arguments and to spell out how they combine. Today, we will investigate a constructionist method of doing that.

Let’s start with the for examples. Adopting the little v hypothesis, we could build the meanings as (2) does.

(2) Jones baked it for Smith.
    a. \([v]\) = \(\lambda z \lambda e. \text{Agent}(e,z)\)
    b. \([\text{for}]\) = \(\lambda x \lambda e. e \text{ is on behalf of } x\)
    c. \([\text{bake}]\) = \(\lambda y \lambda e. \text{bake}(e) \& \text{result}(e,\exists y)\)

We should treat the for PP as an adjunct. That is, it is optional and promiscuous.

(3) a. Jones baked it.
    b. Jones ran for Smith.
    c. Jones died for Smith.
    d. ?* It seems for Smith that things could be different.

Notice that the denotation of bake has built into it a kind of causative. I mean for the “result” predicate to mean something like “e’s result is exist(y).” (This is a way of characterizing creation verbs that Arnim von Stechow cites Angelika Kratzer...
as endorsing in an unpublished paper. It is similar to the treatment in Dowty 1979, although somewhat streamlined.)

How do we get the Greenian double object construction out of this? As you saw in the Harley paper, one idea about the syntax of these constructions is that the two objects form a constituent that excludes the verb. A reason for suspecting this is the scope asymmetry described in Barss and Lasnik (1986) and illustrated by (4).

(4)  
   a. Jones showed them each other’s pictures.  
   b. * Jones showed each other’s parents the children.

This could be explained if there is a phrase that contains the second object that doesn’t contain the first object. That would, under standard definitions, make the second object fall in the scope of the first, but prevent the first object from falling in the scope of the second.

In fact, the scope asymmetry between the first and second object in the double object construction is stronger than expected. It prevents the first object from falling within the scope of quantifiers in the second object. That is not usually the case for asymmetric c-commanders.

(6)  
   a. Jones showed a different child every toy.  
      *every toy > a different child
   b. A different child took every toy.  
      every toy > a different child

It’s not that the second object cannot QR, as we can see from (7).

(7)  
   a. A different teacher gave us every book.  
   b. Jill gave someone everything that Sean did △.

Bruening (2001) makes a proposal about this that invokes a locality condition he formulates as (8).

(8) Shortest  
A pair $P$ of elements $[\alpha, \beta]$ obeys Shortest iff there is no well-formed pair $P'$ which can be created by substituting $\gamma$ for either $\alpha$ or $\beta$, and the set of nodes c-commanded by one element of $P'$ and dominating the other is smaller than the set of nodes c-commanded by one element of $P$ and dominating the other.

(Bruening 2001, (40): 247)
Once the highest QP has QRd, then the lower one can because Shortest no longer prevents that. However, when the second QP QRs, Shortest does force it to go to the lower of the two possible positions above vP — that is, it prevents (11) and allows only (12).

Notice that both quantificational objects are able to scope wider than the subject, as desired. To get a reading in which the subject scopes widest, we make the movement of the subject into its surface position feed the semantics.

For the DP+PP frame, where both scopes are possible, Bruening (2001) suggests a structure different from the one indicated in (2), which Shortest would not apply to correctly. Instead, he suggests (13), which is argued for in Pesetsky (1995).

Shortest will allow a different toy to QR first, obviously, but it will also allow (14).
QR can Pied-Pipe.

We could use Bruening’s system, I think, and still adopt (2) if we recognize that English has Object Shift.

Object Shift is independent of QR — that is, Shortest does not make them compete. That means that Shortest doesn’t force one of these operations to happen before the other, and unless something else does, that will allow representations in which either scope is produced. (Alternatively, we could let object shift be optional, or optionally semantically contentful.)

The scope facts, then, might suggest different structures, and, moreover, a small clause like analysis of the double object construction. Further, there is evidence that the first object of the double object construction behaves as if it is on a left branch for the purposes of evaluating the Left Branch Condition. (See Kayne 1984.)

This would permit derivations like that indicated in (16).

There is some difficulty, however, in evaluating the full range of relevant data — see Kuno (1973).
And finally, Beck and Johnson (2004) argue for a small clause analysis from the behavior of *again*.

(19) Satoshi closed the door again
    a. Satoshi opened the door, and that had happened before.
       (repetitive)
    b. Satoshi opened the door, and the door had been open before.
       (restitutive)

Satoshi again closed the door.
    a. Satoshi opened the door, and that had happened before.
       (repetitive)
    b. *Satoshi opened the door, and the door had been open before.
       (restitutive)

von Stechow (1996) argues for a syntactic account of this ambiguity, one that supports the construction view of argument structure.

(20) \[\text{[again]}p = 1 \text{ if } p \text{ is true and } p \text{ was true previously.}\]

(21)

\[
\text{DP} \quad \text{vP} \\
\text{Satoshi} \quad (\text{V} \quad \text{v} \quad \text{VP}) \\
\quad (\text{open} \quad \text{DP}) \\
\quad \text{the door}
\]

If that is correct, we can detect the meanings of the parts of the double object construction.

(24) Thilo gave Satoshi a map again.
    a. Thilo gave Satoshi a map, and that had happened before.
    b. Thilo gave Satoshi a map, and Satoshi had had a map before.
(25) vP
  /  
 vP again
  /  
 DP vP
    /  
 Thilo v VP
      /  
 V XP
  /  
 gave DP XP
    /  
 Satoshi X DP
      /  
 have a map

(26) vP
  /  
 DP vP
    /  
 Thilo v VP
      /  
 V XP
  /  
 gave XP again
    /  
 Satoshi X DP
      /  
 have a map

(24b) is the harder reading to get, so let me put (24) in a context that enables it.

(27) Thilo and Satoshi bring different skills to the arduous task of traveling. Thilo is superb at managing all the details, and Satoshi is great at finding interesting places to go. When they met in Kansas City for a week of sightseeing, for instance, Thilo arranged the rental car and hotels and Satoshi made up a schedule of places to visit and brought a detailed map. On their very first morning, though, Satoshi lost the map. Fortunately, Thilo gave Satoshi a map again after picking one up at the car rental office.

These are data that have been offered in support of the view that the double object frame involves a small clause. The test from again suggests, moreover, that something like "have" is what heads that small clause. Pesetsky (1995), Bruening (2001) and Harley (2002) suggest that the PP frame also makes up a small clause, so that we’d have a structure like (28).

(28) Smith sent Jones to London.

Bruening (2010) argues that we shouldn’t let the PP frame have a small clause structure as well. His central novel argument towards this end has to do with idioms, but he rehearses two other well known differences between the two constructions that we would be well advised to keep in mind. One is that the Left Branch Condition does not hold of the object in the PP frame. The examples in (29), for instance, contrast with those in (17).

(29) a. ? Who did you send a book about to all the students in the class?
   b. ? What did you buy books about for the children in the hospital?

The other two are that the double object frame does not show up in nominalizations, but the PP frame does. (A discovery of Ross 1974.)

(30) a. the gift of books to the children
   b. the purchase of bangles for Moira
Kayne (1984) relates this to the fact that small clauses are not possible in nominalizations either.

And the other difference between the two frames shows up in Heavy NP Shift, which can only grammatically apply to the object in the PP frame.

Bruening’s idiom argument is based on the absence of idioms that are made up of the verb and the first of the two objects in the double object frame. He claims there is no idiom of the sort that (34) illustrates.

Idioms that include the verb in a double object construction are made up from the second object:

By contrast, the PP frame supports idioms that involve the verb and either of the other terms.

He suggests that what controls whether items can form an idiom or not is (roughly) (37).

If X is part of an idiom, then Y can be too if X selects Y.

He assumes that the PP is selected by the verb, and suggests the structure in (38).

(This is equivalent to our (2), but with the order of composition reversed.) The first object in the double object construction, by contrast, is an argument of the embedded small clause, and not the verb. This predicts that both objects, in both frames, should be able to form an idiom with the verb, and these are not easily found.

We should try to make sense of these differences in whatever model we come up with.

This could be done with a small clause structure. We could make the silent head of that small clause responsible for adding the meaning to bake that creates the double object construction. It should include, then, the possession meaning. Harley’s proposal is that it has just the possession meaning, that I will here gloss with “have.” If so, we could put things together as (39) does.
What I have done here is make the small clause the object of *bake*. This would require, then, that the semantic types of *bake*’s object be flexible enough to include both clauses and individuals. I’ve also existentially closed the state variable in the small clause. I’m behaving, then, as if there is a general process of closing open predicates with an existential quantifier.

(4) is wrong because the “cause” element of Green’s paraphrase is too strong. It is certainly less strong than the cause part of the meaning of *bake*.

(40)

a. * Jones baked a cake, but no cake got made.
   b. Ms Jones baked Mr Smith a cake, but then forgot to give it to him.

In Beck and Johnson (2004), we suggested leaving the strength of cause intact, but weakening the “have” relation in the same way that progressive weakens achievement verbs.

(41)

a. Jill crossed the road.
   b. Jill is crossing the road.

For (41a) to be true, the event described must include Jill getting from one side of the road to the other. We will want to build this into the meaning of the verb *cross*. (It’s not in the meaning of the past tense, as we can see from the interpretation of *I saw Jill cross the road*.) For (41b) to be true, of course, this isn’t the case. There’s always that unseen truck, after all. One way of characterizing what distinguishes these examples goes like this: (41b) is true just in case the event involving Jill and the road has a normal continuation that makes “Jill cross the road” true. Let “prog” represent a function that takes P and yields something that is true just in case the normal continuation of things creates a situation in which P is true. We could replace “have(*x, y*)” with “prog(*have(*x, y*)*)” and weaken in an appropriate way the force of causation.

Two worries:

(42)

a. Progressives don’t typically combine with stative predicates in English (*I am knowing this problem.*)
   b. The second object is not a logical object of *bake* in (39). The creation of the second object no longer is part of the meaning of (39), but it is still part of the meaning of the sentence (*Jones baked Smith a cake, but no cake got made.*)

Now let’s consider a case involving *to*. I’ll use “at” to represent the predicate that extracts a reference to a location from a DP referring to a thing. So “at(*e, x*)” has a meaning paraphrased by “the location of *x* in the event *e*.” We’ll imagine that to can have as one of its meanings (43).

(43) \[ \text{[to]} = \lambda x. \lambda e. \text{at}(e, x) \]

(44) Jones threw it to Smith.
are positing, then it will have to come from somewhere else. A lexicalist approach
would give *throw* another lexical entry. The effect of that would be to turn *throw*
into something close to our creation verb. A constructionist approach would posit
another component to the phrasal semantics, one that gives to the VPs containing
the double object frame the cause meaning. I will express this here with a silent
morpheme, “cause”.

(45) Jones threw Smith this.

a. \[\text{cause} = \lambda p \lambda e \text{cause}(e, p)\]
b. \[\text{vP} \]
\[\lambda e. \text{throw}(e) & \text{cause}(e, \exists s \text{have}(s, \text{this}, \text{Smith})){} & \text{Agent}(e, \text{Jones})\]

\[\text{vP}\]
\[\lambda e. \text{throw}(e) & \text{cause}(e, (\exists s \text{have}(s, \text{this}, \text{Smith})))\]

\[\text{V}\]
\[\lambda e. \text{cause}(e, (\exists s \text{have}(s, \text{this}, \text{Smith})))\]

\[\text{CausP}\]
\[\text{throw}\]

\[\lambda s. \text{have}(s, \text{this}, \text{Smith})\]

\[\text{PP} \]
\[\lambda s. \text{have}(s, \text{this}, \text{Smith})\]

\[\text{DP}\]
\[\text{Smith}\]

\[\text{PP}\]
\[\text{P}\]

\[\text{this}\]

The need for an additional “cause” component is present for *for*-examples that
don’t involve creation verbs.

(46) Jones bought Smith a ring.

\[\text{vP}\]
\[\lambda e \text{bought}(e) & \text{cause}(e, \exists s \text{have}(s, \text{the ring}, \text{Smith})) & \text{Agent}(e, \text{Jones})\]

\[\text{DP}\]
\[\text{vP}\]
\[\lambda e \text{bought}(e) & \text{cause}(e, \exists s \text{have}(s, \text{the ring}, \text{Smith}))\]

\[\text{V}\]
\[\lambda s \text{have}(s, \text{the ring}, \text{Smith})\]

\[\text{PP}\]
\[\text{PP}\]

\[\text{DP}\]
\[\text{PP}\]

\[\text{the ring}\]

The first thing to notice about these representations is that the argument structure of the verb never includes the PP. In each case, the verbs are transitive in their
PP frame. The *for*-phrase are available, on this view, for any event that can be con-
strued as happening on behalf of something. Similarly, *to*-phrases can be inserted
into any VP that describes an event that involves a directed path with a location at
its terminus. There is no direct connection between the argument structure of the
verb and the PP in these examples. The connection between verb and PP comes
entirely through the kinds of events involved. If that is correct, it means we cannot
think of the alternation as one that converts a DP+PP frame into a DP+DP frame.
Instead, it relates certain transitive verbs to the double object frame.

The second thing to notice is that in the representations for the double object
construction, the non-creation verbs are intransitive. That is, they are no longer
combining with a DP object in the way that they were in the DP+PP frame. A sen-
tence like (47), for instance, doesn’t have a meaning paraphrased by Green’s (47a),
but rather the one paraphrased by (47b).

(47) Smith sent Jones the book.

a. Smith caused Jones to have the book by sending it.

b. Smith caused Jones to have the book by sending.

We lose in these representations the fact that it is the second object that undergoes
the action denoted by the verb.
There is a similar problem found in resultatives, and a solution to that problem that we might want to exploit here. Consider (48).

(48) Jones smashed the kumquats flat.

Hoekstra (1988) argues that these have a structure like (49).

(49) \[
\begin{array}{c}
\text{VP} \\
\text{smashed} \\
\text{DP} \\
\text{the kumquats} \\
\text{flat}
\end{array}
\]

This analysis, like ours, loses the fact that we feel the kumquats are hammered. Kratzer (2005) suggests a solution which would easily port to our cases. First, she suggests that there is a cause predicate relating the verb to the AP:

(50) \[
\begin{array}{c}
\text{VP} \\
\text{smashed} \\
\text{caus} \\
\text{DP} \\
\text{the kumquats} \\
\text{flat}
\end{array}
\]

What "caus" will do here is is say that the smashing event results in the state of the kumquats being flat. Now, we have to know something about the events that are being described by the predicates that make up a VP. These events are "minimal."

(51) An event, e, is a minimal P-event if it contains just what's needed to make P(e) true and nothing more.

(See Angelika's Stanford Encyclopedia of Philosophy entry on situations for a (relatively) easy explication and some references.) To get a flavor for why this is needed, consider (52).

(52) Angelika ran for an hour.

run describes a running event, and for an hour tells us its duration. We want the event that is referred to by run to include just exactly that stuff – its location(s), its participant, its properties – that lasted an hour. We don't want to include Angelika's pre-race warm-up or her stretching afterwards. (That would be included in Kyle ran for an hour, of course, but that's the difference between Angelika and I.)

Okay, so the smashing event described by (48) is minimal in this sense. Now the solution to the problem posed by (50) involves a suggestion in Chierchia (2004) that "caus" be defined so that the event and the state that they relate be both part of the same minimal event. This, Angelika notes, will mean that the smashing event can contain the kumquats and the state of them being flat, but nothing else. The result is that the kumquats is made part of the same minimal event that smash describes, and the feeling of objecthood is approximated. Angelika offers (53) as an example suggestive that this is the correct solution.

(53) Jones poured the teapot empty.

Clearly, the teapot is not the object of pour. But it is still a viable element in the minimal situation that makes pour the teapot empty true.

I don't know that this will fail for cases like kick, and the other instances of ballistic motion. I think these can all involve intransitive verbs, and the use of "caus" could, perhaps, achieve the desired effect. But I don't believe that, in general, only intransitive verbs can be found in the double object frame.

(54) a. * She bought.
    b. * He sent.
    c. * They gave.

And we can see most clearly, perhaps, in the case of creation verbs that we need the second DP in the double object construction to be the object of the verb. Perhaps we could adopt Bruening (2010)'s solution.

(55) Smith baked Jones a cake
But I don’t know how to get the semantics out of this.

References


