

Constructionist Redux

Ling 750: Acquisition and Arguments
25 September 2013

Again, our syntactic goals: Explain (1) and (2).

- (1)
 - a. The Generalized Left Branch condition holds of the first of the double objects, but not of the first of the two arguments in the PP frame.
 - b. The double object construction does not nominalize, but the PP frame does.
- (2)
 - a. Heavy NP shift is blocked for the first of the double objects, but not for the first of the two arguments in the PP frame.
 - b. There is scope rigidity in the double object construction, but not in the PP frame.

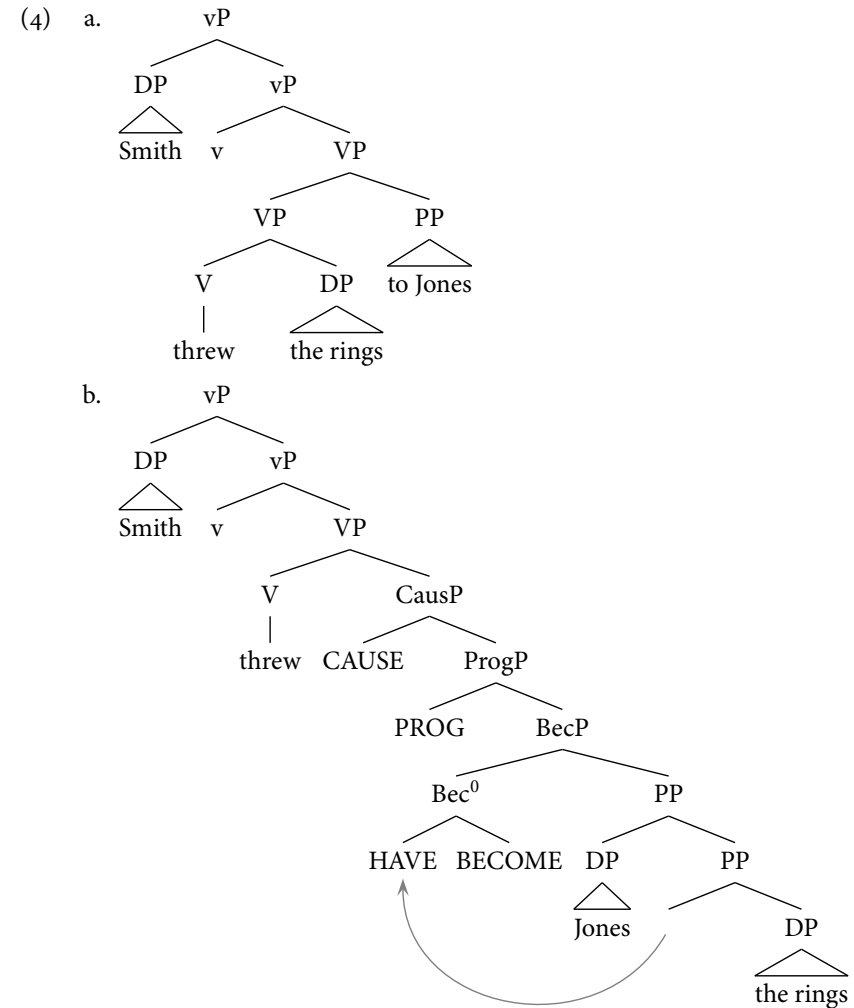
Other desiderata:

- Be Constructionist, because it produces a linking theory.
- Get the meanings right.
- Solve Baker's problem.

For the Constructionist approach to honestly provide a linking theory, we should have a working model of how lexical insertion matches lexemes with heads. I like:

- (3) A lexical item can be matched against predicates P^1, P^2, \dots, P^n only if they are adjacent when linearized.

Where we left it last time with motion verbs.



(5) Denotations:

- a. $\llbracket \text{TO}_{\text{at}} \rrbracket = \lambda x \lambda y \lambda s. y \text{ is at location_of}(x) \text{ in } s.$
- b. $\llbracket \text{HAVE} \rrbracket = \lambda y \lambda x \lambda s. x \text{ has } y \text{ in } s$
- c. $\llbracket \text{BECOME} \rrbracket = \lambda P \lambda e. P(\text{pre}(e)) \neq 1 \ \& \ P(\text{post}(e)) = 1.$
 $\text{pre}(e)$ is the state at the beginning of e
 $\text{post}(e)$ is the state at the end of $e.$
- d. $\llbracket \text{PROG} \rrbracket = \lambda P \lambda e. e \text{ can plausibly have continued and become a larger event } f \text{ such that } P(f) = 1.$
- e. $\llbracket \text{CAUSE} \rrbracket = \lambda P \lambda e. \exists e'. P(e') \text{ only if } e \text{ occurs \& } e' \text{ is a part of } e.$
- f. $\llbracket \text{THROW} \rrbracket = \lambda e. e \text{ is a throwing.}$
- g. $\llbracket \text{THROW}^T \rrbracket = \lambda x \lambda e. e \text{ is a throwing of } x.$

(6) Lexical Map:

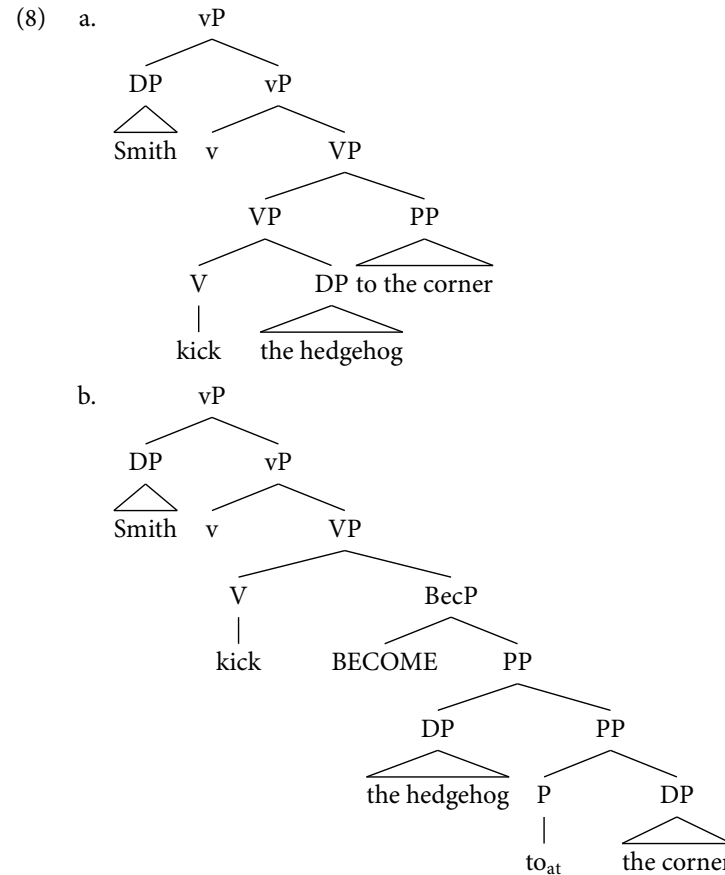
- a. $\text{throw} \rightarrow \text{THROW or THROW}^T$
- b. $\text{to} \rightarrow \text{TO}_{\text{at}}$
- c. $P_{\text{have}} \rightarrow \text{CAUSE+PROG+BECOME+HAVE}$

We capture the differences in (1) with these geometries, and we might capture the scope rigidity facts described in (2) the way that Bruening (2001) suggests as well.

We also saw, however, evidence for a small clause organization for the PP frame.

- (7) A hedgehog has managed to get into Satoshi's house, and is hiding in his bedroom, in the corner. Satoshi discovers the hedgehog as he prepares for bed, and thinking that hedgehogs might make nice pets, leaves it undisturbed. During the night, the hedgehog leaves his hiding place and explores the room. By the time Satoshi wakes up in the morning, it is sleeping out in the middle of the room. Hearing his pet-averse roommate approaching, he quickly
 ...kicks the hedgehog to the corner again. (# but it didn't get all the way there.)

I suggested we should let there be two parses for this frame, the other one of which would be (8b).



We need the BECOME here to put the parts together. We put BecP together with *kick* with predicate conjunction. That will yield a meaning like (9).

- (9) $\lambda e \text{ AGENT}(\text{Smith}, e) \ \& \ \text{kick}(e) \ \& \ \text{the hedgehog isn't at the corner in } \text{pre}(e) \text{ and the hedgehog is at the corner at } \text{post}(e).$

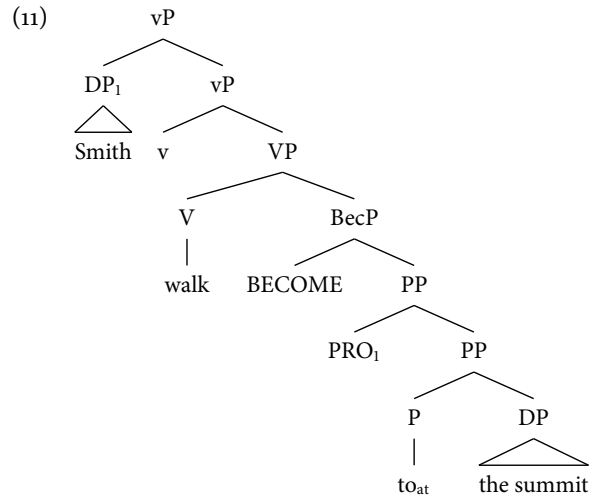
If we make BECOME part of either the lexicalization of *kick* or *to*, we have the problem of understanding how these items can mean what they mean in (8a).

Perhaps we should let the BECOME predicate have an independent life, either as a morpheme or a rule of semantic combination. Why might we think that BECOME can occur without being lexicalized? Because there are other construction

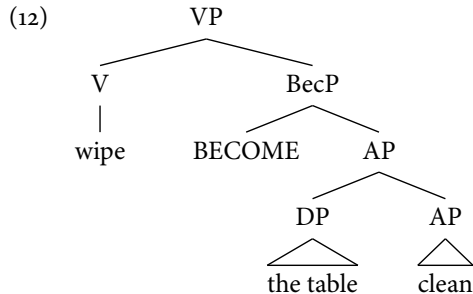
types where its presence might arise. For instance, we might see the action of it in the activity to accomplishment conversion that *to* phrases cause in English.

- (10) a. # Smith walked in an hour.
b. Smith walked to the summit in an hour.

The difference between activities and accomplishments is the presence of a culmination state. Using BECOME to put together the VP in (11) creates such a meaning.



And we might also see it in the resultative constructions that we talked about a couple of weeks ago.



Beck and Snyder (2001) argues from typological grounds that this ability depends on the lexicon containing free BECOME predicates.¹ They report that languages

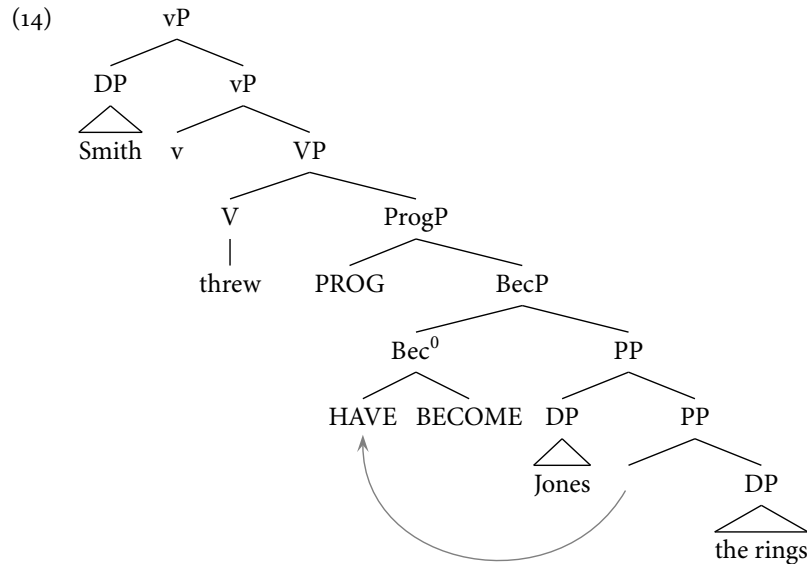
¹ They use CAUSE, but its function is parallel to our BECOME.

which don't allow resultatives of the sort also don't allow the sorts of conversions from activities to accomplishments that (11) illustrates. Here is their sample:

	Resultatives	activity/accomplishment
English	Yes	Yes
German	Yes	Yes
Japanese	Yes?	Yes
Korean	Yes	Yes
Mandarin	Yes	Yes
French	No	No
Hebrew	No	No
Hindi	No	No
Russian	No	No
Spanish	No	No

What I've done, then, is avoid the lexical conversion of verbs like *kick* that we ended with last week. Rather than having two *kicks*, one for the small clause frame that includes the BECOME predicate and one that doesn't, we have just the one *kick*. The danger this raises, of course, is that now we've got this BECOME predicate running around in the language and it might do harm.

I wonder if we can get rid of CAUSE in our double object frames, and just rely on predicate conjunction, or event identification, and BECOME to do the work.



- (15) $\lambda e \text{ AGENT}(\text{Smith}, e) \ \& \ \text{THROW}(e) \ \& \ e$ can continue into a larger f such that Jones doesn't have the rings in $\text{pre}(f)$ and Jones has the rings in $\text{post}(f)$.

We can speculate, then, that English includes these lexical items:

- (16) a. $to \rightarrow \text{TO}_{\text{at}}$
 b. $kick \rightarrow v + \sqrt{\text{kick}}$
 c. $open \rightarrow \text{BECOME} + \sqrt{\text{open}}$ (i.e., *becoming open*)
 d. $P_{\text{have}} \rightarrow \text{PROG} + \text{BECOME} + \text{HAVE}$ (i.e., *coming to have*)
 e. BECOME

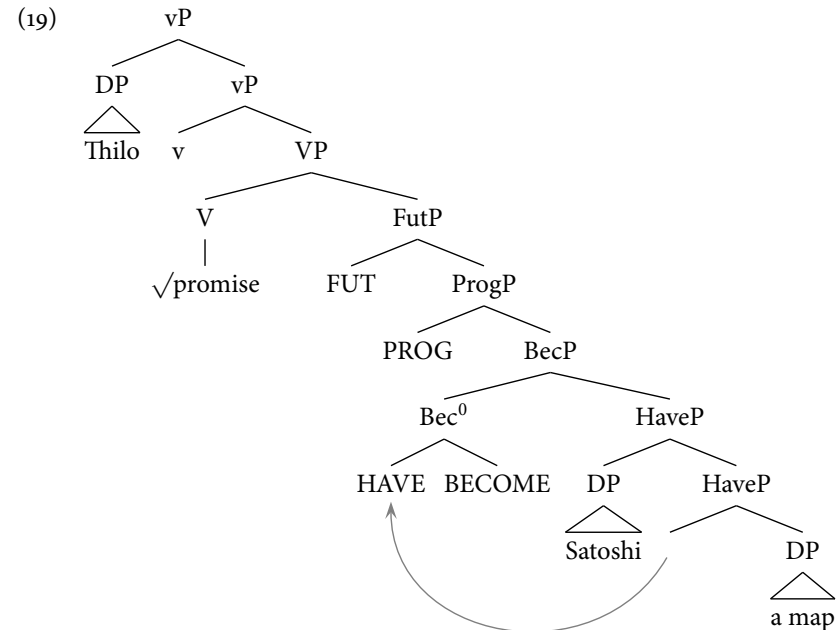
We capture the difference between the caused entailment between the PP frame and the double object frame of *kick* in this way. The entailment is defeated by the PROG operator that comes with P_{have} .

On this lexicalization, P_{have} lexicalizes $\text{PROG} + \text{BECOME} + \text{HAVE}$, and so we should expect all double object constructions to involve this relation between the two objects. We saw last time that there are some verbs that introduce the double object construction that do not transparently do that. For instance:

- (17) Thilo promised Satoshi a map.
 $\text{promise} \rightarrow v + \sqrt{\text{promise}} + \text{FUT}$

- (18) Thilo denied Satoshi ice-cream.
 $\text{deny} \rightarrow v + \sqrt{\text{deny}} + \text{NOT}$

And, as indicated, I suggested that the verbs involved here lexicalize other operators that embed the P_{have} relation. Here's what this would give us for *promise*.



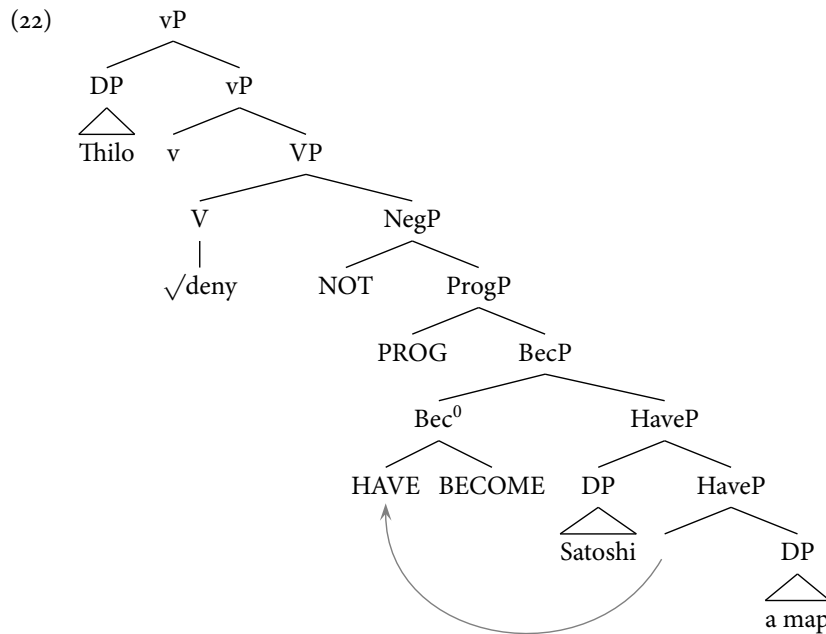
This yields the denotation (roughly) represented in (20).

- (20) $\lambda e \text{ Agent}(\text{Thilo}, e) \ \& \ \text{PROMISE}(e) \ \& \ \text{FUT}(e) = e' \ \& \ e'$ can continue to become a larger f such Satoshi doesn't have a map in $\text{pre}(f)$ and Satoshi has a map in $\text{post}(f)$.

We have to understand FUT to be something like:

- (21) $\llbracket \text{FUT} \rrbracket(P)(e)$ will combine with a predicate of events, P , and shift the time of those events into the future relative to the time of event e .

The scenario with *deny* looks like (22).



(23) $\llbracket \text{NOT} \rrbracket = \lambda P \lambda e \neg P(e)$

Yielding us a meaning like:

(24) $\lambda e \text{ AGENT}(\text{Thilo}, e) \ \& \ \text{DENY}(e) \ \& \ \neg[\ e \text{ can continue into a larger } f \text{ such that Satoshi doesn't have a map in } \textit{pre}(f) \text{ and Satoshi does have a map in } \textit{post}(f)]$

Like *deny* is *spare* and *cost*. Notice that in both of these examples, *a map* can scope out of the BECOME operator's scope.

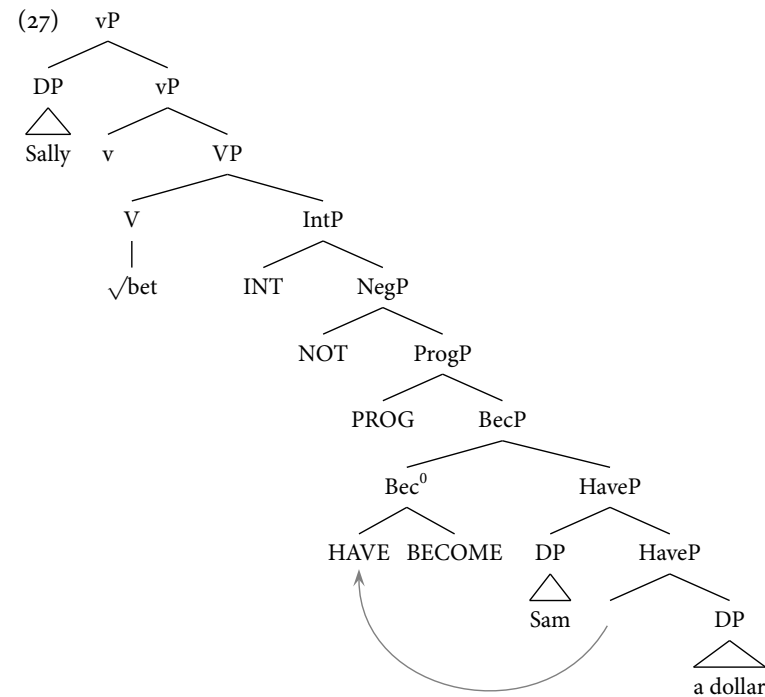
Another case that involves more than just the PROG+BECOME+HAVE component is *bet*.

(25) Sally bet Sam a dollar.

We might see *bet* as involving NOT and another modal operator that expresses something like what *intend* conveys. I'll represent that operator with INT.

(26) $\textit{bet} \rightarrow v + \sqrt{\text{BET}} + \text{INT} + \text{NOT}$

Plugging this into our structures give us (27), with a meaning like that given in (28).



(28) $\lambda e. \text{Agent}(\text{Sally}, e) \ \& \ \text{BET}(e) \ \& \ \text{INT}(e) = e' \ \& \ \text{NOT} \ (e' \text{ continues to become } f \text{ such Sam doesn't have a dollar in } \textit{pre}(f) \text{ and Sam has a dollar in } \textit{post}(f)).$

INT should, perhaps, give us a possible event, e' , accessible from e in which Sally's desires are satisfied. From this we need to get the sense that Sam is being deprived of a dollar that he would otherwise have.

An interesting feature of these verbs is that they do not participate in the Dative Alternation. They have the double object frame, but not the PP frame

- (29)
- a. * Thilo promised a map to Satoshi.
 - b. * Thilo denied ice-cream to Satoshi.
 - c. * Sally bet a dollar to Satoshi.

Some of these can appear as plain transitive verbs:

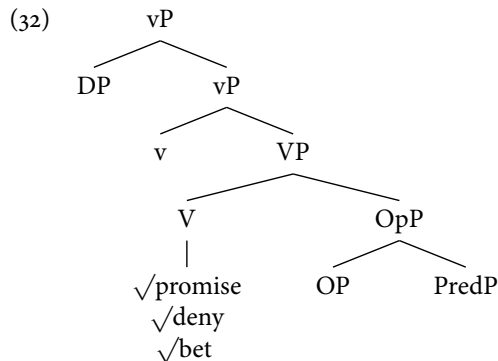
- (30)
- a. Thilo promised a map.
 - b. * Thilo denied ice-cream.

- c. Sally bet a dollar.

I suggest that these are just the double object frames with “subject” argument of P_{have} implicit. And these, of course, can combine with the (nearly) ubiquitous benefactives:

- (31) a. Thilo promised a map for Ben.
b. Sally bet a dollar for/from Sam.

And, as expected if these really are double objects with implicit first objects, these benefactives do not have the meaning that is provided to the first object. These are not, then, the PP frames related by the Dative Alternation to the double object construction. This makes sense on the proposal here. The meanings we’ve associated with *promise*, *bet* and *deny* would prevent them from being in the PP frame. They can only fit into structures of the form indicated in (32).



where “PredP” is a predicate of events.

OP, here, is whatever predicate, or pair of predicates, that get bundled into the lexical item. I don’t know if this is sufficient to derive the fact that these verbs only combine with the phrase projected by P_{have} .

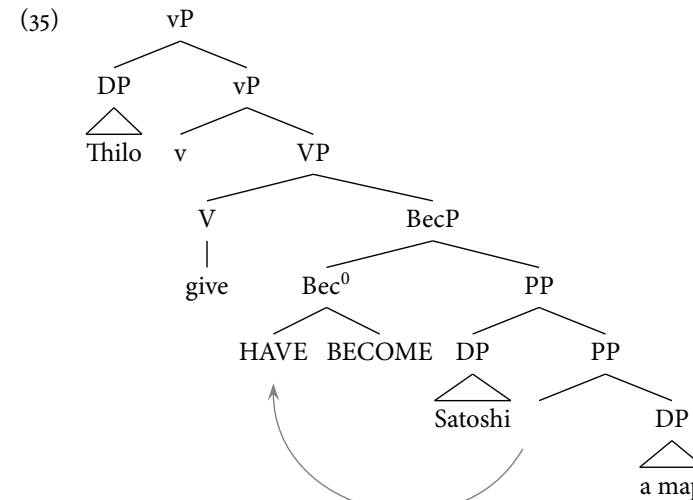
The other verb we looked at last week that does not seem to embed PROG+BECOME+HAVE is *give*, and related verbs. Instead, these verbs seem to embed BECOME+HAVE.

- (33) Thilo gave Satoshi a map, #but he never got it.

Like the *promise/deny/bet* class, then, we cannot let *give* have a meaning that allows the P_{have} P inside. This case fits most naturally into the solution space we’ve just looked at. *give* selects a special kind of double object frame. The suggestion I made last time is that it lexicalizes HAVE.

- (34) $give \rightarrow v + \sqrt{give} + BECOME + HAVE$

So:



- (36) $\lambda e \text{ AGENT}(\text{Thilo}, e) \ \& \ \text{GIVE}(e) \ \& \ e$ can continue into a larger f such that Satoshi doesn’t have a map in $pre(f)$ and Satoshi has a map in $pre(f)$

Just as for the *promise/bet/deny* group, we should expect this meaning for *give* to prevent it from being in the PP frame. It’ll fit only in the frame that (32) sketches, and this is supposed to get us to the fact that these verbs can only be found in the double object frame.

This, of course, seems patently false for *give*.

- (37) Thilo gave a map to Satoshi.

But we’ve learned from Hovav and Levin (2008) that these are not the same as the other PP frames.

- (38) a. * Where did Thilo give the map?
Where did Thilo kick the ball?
b. * Thilo gave the map there.
Thilo kicked the ball there.
c. * Thilo gave the map halfway to Satoshi.
Thilo kicked the ball halfway to Satoshi.

There remains in the PP frame the possession meaning; the shift to a motion+goal that comes with the ballistic motion verbs does not arise.

- (39) a. Give a fresh coat of paint to the front door.
 b. ...gave a black eye to the kid ...
 c. ...give a festive air to Park Square ...
- (40) a. The front door has a fresh coat of paint.
 b. The kid has a black eye.
 c. Park Square has a festive air.

(Hovav and Levin 2008, (19)&(20): 139)

We also keep the success entailment with *give*

- (41) a. Thilo gave a map to Satoshi, #but Satoshi never got it.
 b. Thilo kicked a ball to Satoshi, but it never got there.

I've engineered things to prevent *give* from fitting into the PP frame, so these examples must come about through a different means, as their peculiarities suggest. Our role model:

- (42) Maria ha fatto riparare la macchina a Giovanni.
 Jane has made repair the car to John
 Jane has made John repair the car.

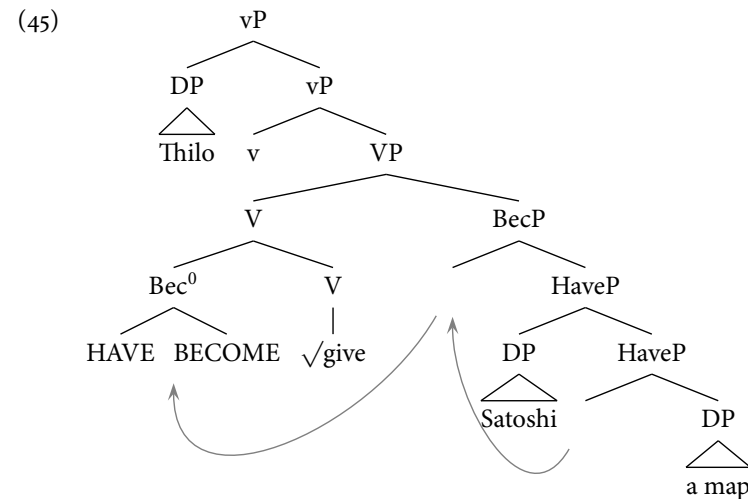
As in the Italian/French cases, we'll want the object that has been fronted to get its Accusative Case from the higher *v*. That is because Passive, which takes the Accusative from *v*, affects the DP object:

- (43) A map was given to Satoshi.

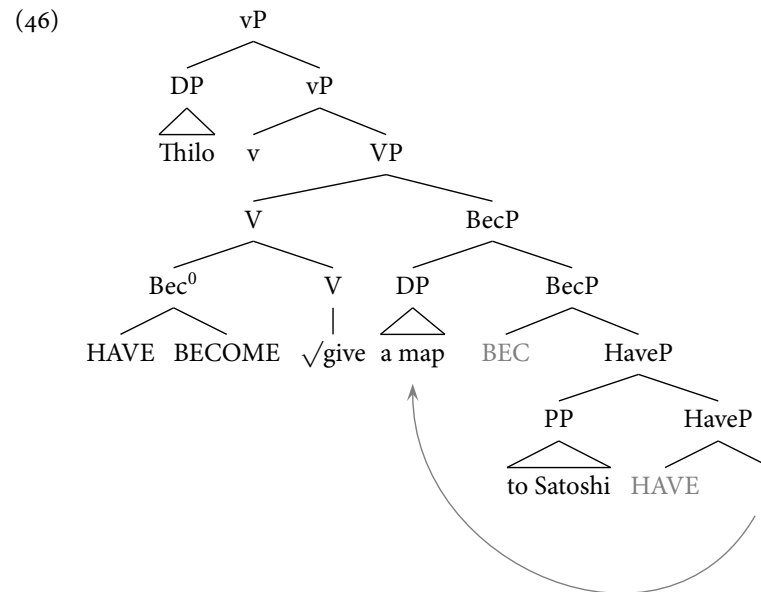
So:

- (44) When a head of a small clause is incorporated into the head of a selecting verb, a DP governed by the small clause head can A move into a Case marked position in the higher clause, and this is accompanied by attaching *to*/Dative to the subject passed.

Assume, then, that an alternative to (35) is (45).



And this triggers the other changes.



Does this account preserve our syntactic goals?

- The scope flexibility in the PP frame could arise by letting the surface or underlying position of the second object be the source for QR.

(47) I gave a different map to every child.

Yes: A movement of the object gives it two positions from which its evaluation can occur.

- Let *of* be assigned only to the objects of a lexeme and we get the nominalization.

(48) a. * the gift of Satoshi (of) a map
b. The gift of a map to Satoshi

Maybe: Imagine that whatever allows A movement of the object out of the embedded small clause allows the same process in nominalizations. Then the standard (Kayne) account of (48) can hold. The clausal complements to nouns are barriers for Case assignment.

- Left Branch Condition:

(49) a. * What did you give [_{DP} an advocate for] a map?
 ↑
b. What did you give [_{DP} a map of] to the children in the classroom?
 ↑

Maybe: Object shift is not known to change the island status of the DPs it affects. The DP that moves in (46) has Object Shifted.

Now our problem is to understand why the same shift is not available to the *promise/bet/deny* class. I think what's relevant is the shift into proximity of a Case assigner, like *v*. When Head movement brings the relevant X^0 into range of *v*, then the shift is possible, but not otherwise.

Let's see if we can incorporate the ideas in Krifka's papers to this format. We look at the contrast in (50).

(50) a. Thilo kicked a ball to Satoshi.
b. Thilo kicked Satoshi a ball.

c. Thilo pushed a ball to Satoshi.
* Thilo pushed Satoshi a ball.

The leading idea is that *kick* describes an event that only needs to have an Agent, but *push* can describe an event only if the Agent and Theme are both involved. This is in-line with the observations that Pinker has, and he credits Pinker with the inspiration. He suggests that *pull* is a relation between events that satisfies Homomorphism.

(51) Homomorphism

$H(e, e')$ iff for all $x, x' \leq e$ and $y, y' \leq e'$:

a. if $y \neq y'$ and $H(x, y)$ and $H(x', y')$, then $x \neq x'$, and

distinct parts of e' correspond to distinct parts of e

b. if $H(x, y)$ and $H(x', y')$, then $H(x \oplus x', y \oplus y')$

the sum of two parts of e correspond to the sum of two parts of e'

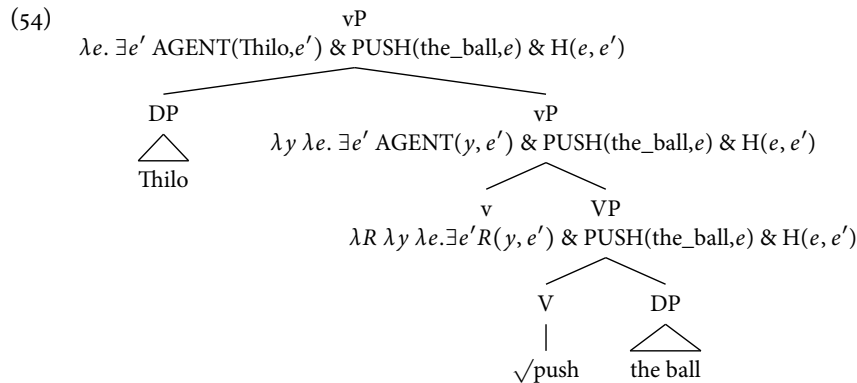
pull is homomorphic and *kick* is not. For Krifka, this means that *pull* has a motion component to its decomposition, and *kick* need not. This derives the absence of the Dative Alternation for *pull*:

To specify the manner of *pull*, we must refer to the movement event, but the DO construction does not provide for that.

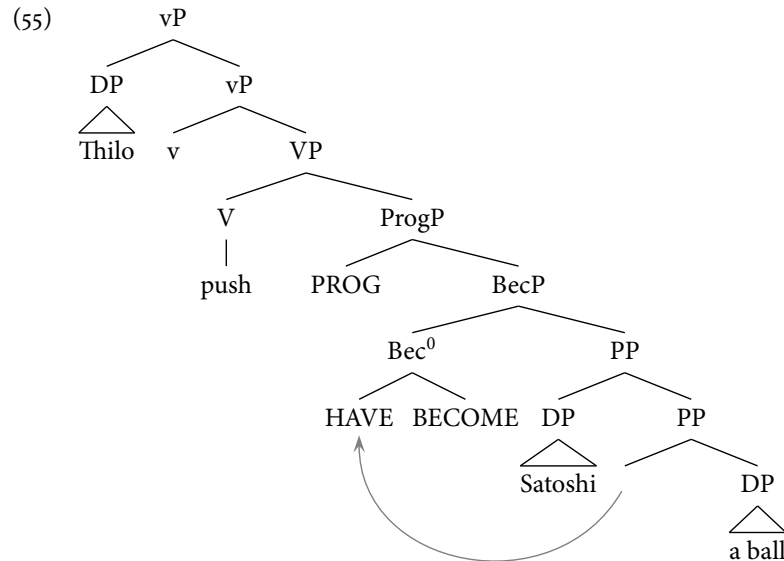
He stipulates that the DO frame has no motion predicate in it, and this is incompatible with *pull*. I want to improve on that, so I'll try to use these materials in a slightly different way. I'll assume that the fundamental difference in these predicates is that *pull* is a relation between events, because it is homomorphic, and *kick* is not.

(52) $\llbracket \text{push} \rrbracket = \lambda x \lambda R_{\langle e, s \rangle} \lambda y \lambda e. \exists e' R(y, e') \ \& \ \text{PUSH}(x, e) \ \& \ H(e, e')$

(53) $\llbracket v \rrbracket = \lambda x \lambda e \text{ AGENT}(x, e)$



Now, imagine putting *push* into a double object frame. (I'll assume that there is an intransitive version of *push*, just as I have done for the other motion verbs that undergo the Dative Alternation.)



- (56) $\lambda e \exists e' \text{ AGENT}(\text{Thilo}, e') \& \text{ PUSH}(e) \& \text{ H}(e, e') \& e$ can continue into a larger f such that Satoshi doesn't have a ball in $\text{pre}(f)$ and Satoshi has a ball in $\text{post}(f)$.

Suppose that $\text{pre}(f)$ and $\text{post}(f)$ are necessarily parts of f . That is, suppose that these are states that are part of the non-state f . And also imagine that PROG requires f to have the homomorphism that e does – it does not permit the kind of event that it is to change. If those assumptions are sound, then (15) requires that the state described by *Satoshi has a ball* have Thilo as its Agent. I don't think I'm being outlandish to assume that Agent, however it is defined, is not a kind of relation that can involve a state. That is what makes this ill-formed.

References

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