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 $P_1, P_2, \ldots, P_n$ only if they are adjacent when linearized.

Where we left it last time with motion verbs.
(5) Denotations:
   a. \([\text{TO}] = \lambda x \lambda y \lambda s. y\) is at \text{location_of}(x) in s.
   b. \([\text{HAVE}] = \lambda y \lambda x \lambda s x\) has y in s
   c. \([\text{BECOME}] = \lambda P \lambda e. P(\text{pre}(e)) \neq 1 \& P(\text{post}(e)) = 1.
      \text{pre}(e)\) is the state at the beginning of e
      \text{post}(e)\) is the state at the end of e.
   d. \([\text{PROG}] = \lambda P \lambda e. e\) can plausibly have continued and become a larger
      event f such that P(f) = 1.
   e. \([\text{CAUSE}] = \lambda P \lambda e. \exists e'. P(e')\) only if e occurs \& e' is a part of e.
   f. \([\text{THROW}] = \lambda e. e\) is a throwing.
   g. \([\text{THROW}^T] = \lambda x \lambda e. e\) is a throwing of x.

(6) Lexical Map:
   a. \text{throw} \rightarrow \text{THROW or THROW}^T
   b. \text{to} \rightarrow \text{TO}\_at
   c. \text{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 undis-
turbed. During the night, the hedgehog leaves his hiding place and ex-
plores the room. By the time Satoshi wakes up in the morning, it is sleep-
ing out in the middle of the room. Hearing his pet-aversive roommate
approaching, he quickly
   \ldots 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).

(8) a. \begin{align*}
   \text{vP} &
   \downarrow
   \text{DP} \quad \text{vP} \\
   \text{DP} &
   \quad \text{vP}
\end{align*}

We need the \text{BECOME} here to put the parts together. We put \text{BecP} together with
\text{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{the hedgehog is at the corner at post}(e).

If we make \text{BECOME} part of either the lexicalization of \text{kick} or \text{to}, we have the
problem of understanding how these items can mean what they mean in (8a).
Perhaps we should let the \text{BECOME} predicate have an independent life, either
as a morpheme or a rule of semantic combination. Why might we think that BE-
COME 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 \textsc{become} to put together the VP in (11) creates such a meaning.

\[\text{vP}\]
\[\text{DP}_1\]
\[\text{vP}\]
\[\text{Smith}\]
\[\text{v}\]
\[\text{VP}\]
\[\text{V}\]
\[\text{BecP}\]
\[\text{walk}\]
\[\text{BECOME}\]
\[\text{PP}\]
\[\text{PRO}_1\]
\[\text{PP}\]
\[\text{P}\]
\[\text{DP}\]
\[\text{to}_{\text{at}}\]
\[\text{the summit}\]

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

(12) \[\text{VP}\]
\[\text{V}\]
\[\text{BecP}\]
\[\text{wipe}\]
\[\text{BECOME}\]
\[\text{AP}\]
\[\text{DP}\]
\[\text{AP}\]
\[\text{the table}\]
\[\text{clean}\]

Beck and Snyder (2001) argues from typological grounds that this ability depends on the lexicon containing free \textsc{become} predicates.\footnote{They use \textsc{cause}, but its function is parallel to our \textsc{become}.} They report that languages 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:

<table>
<thead>
<tr>
<th>Language</th>
<th>Resultatives</th>
<th>activity/accomplishment</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>German</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Japanese</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Korean</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Mandarin</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>French</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Hebrew</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Hindi</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Russian</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Spanish</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

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

I wonder if we can get rid of \textsc{cause} in our double object frames, and just rely on predicate conjunction, or event identification, and \textsc{become} to do the work.
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 $P_{\text{have}}$.

On this lexicalization, $P_{\text{have}}$ 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.

.promise $\rightarrow v+/\text{promise}+\text{FUT}$

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

(20) $\lambda e \ \text{Agent(Thilo,e)} \ & \text{PROMISE(e)} \ & FUT(e)=e' \ & e'$ 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 $\text{FUT}$ 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).
Yielding us a meaning like:

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

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

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

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

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 \( P_{\text{have}} \) 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).

(32)  
\[
\begin{array}{c}
\text{vP} \\
\text{DP} \quad \text{vP} \\
\quad \text{v} \quad \text{VP} \\
\quad \text{V} \quad \text{OpP} \\
\quad \text{\[]promise\]} \quad \text{OP} \quad \text{PredP} \\
\end{array}
\]

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 \( P_{\text{have}} \).

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 \( P_{\text{have}} \) 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{\text{give}}+\text{BECOME}+\text{HAVE}

So:

(35)  
\[
\begin{array}{c}
vP \\
\text{DP} \quad vP \\
\quad \text{Thilo} \quad v \quad \text{VP} \\
\quad \text{V} \quad \text{BecP} \\
\quad \text{\[give\]} \quad \text{Bec}^0 \quad \text{PP} \\
\quad \text{\[HAVE\]} \quad \text{BECOME} \quad \text{DP} \quad \text{PP} \\
\quad \text{Satoshi} \quad \text{DP} \quad \text{a map} \\
\end{array}
\]

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.

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

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

(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?
   b. * Where did Thilo kick the ball?
   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 sug-
gest. 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 select-
ing 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).
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 X₅ 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.

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 push is a relation between events that satisfies Homomorphism.

(51) Homomorphism
    H(e,e') iff for all x,x' ≤ e and y,y' ≤ e':
    a. if y ≠ y' and H(x,y) and H(x',y'), then x ≠ x', and distinct parts of e' correspond to distinct parts of e
    b. if H(x, y) and H(x', y'), then H(x ⊕ x', y ⊕ y')
    the sum of two parts of e correspond to the sum of two parts of e'

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

To specify the manner of push, 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 push. 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 push is a relation between events, because it is homomorphic, and kick is not.

(52) \[ \text{[push]} = \lambda x \lambda R_{e,s} \lambda y \lambda e. \exists e' R(y, e') \& \text{PUSH}(x, e) \& H(e, e') \]

(53) \[ \text{[v]} = \lambda x \lambda e \text{AGENT}(x, e) \]
(54) \[
\begin{align*}
\lambda e \, \exists e' \ & \text{AGENT(Thilo,e')} & \land \text{PUSH(the\_ball,e)} & \land \text{H(e,e')} \\
\end{align*}
\]

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

(55) \[
\begin{align*}
\lambda y \lambda e \, \exists e' \ & \text{AGENT(y,e')} & \land \text{PUSH(the\_ball,e)} & \land \text{H(e,e')} \\
\end{align*}
\]

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

Suppose that \text{pre}(f) and \text{post}(f) are necessarily parts of \textit{f}. That is, suppose that these are states that are part of the non-state \textit{f}. And also imagine that \text{PROG} requires \textit{f} to have the homomorphism that \textit{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 \text{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


Krifka, Manfred. 2003. Semantic and pragmatic conditions for the dative alternation. In \textit{International Conference on English Language and Linguistics}. Seoul, South Korea: KASELL.