

1 What is it about movement that triggers island effects?

A commonplace assumption is that islands are something found only in movement operations. That certainly seems to be the case for such things as Ross's Sentential Subject condition and Complex NP Constraint, and also for what is sometimes called the Adjunct Condition. A quick way to see why this is commonplace is to compare cases of movement with cases of pronominal binding.

- (1) Complex NP Constraint
 - a. Every linguist₁ revisited [the problem that first interested her₁].
 - b. * Which linguist₁ did you revisit [the problem that first interested t₁]?
- (2) Sentential Subject Condition
 - a. No linguist₁ realizes that [to understand her₁] isn't easy.
 - b. * Which linguist₁ did you realize [to understand t₁] isn't easy?
- (3) Adjunct Condition
 - a. Some linguist₁ slept [while another linguist spoke to her₁].
 - b. * Which linguist₁ did you sleep [while another linguist spoke to t₁]?

But what is it about movement that triggers the island effects? These islands do not limit the distance that variables can be bound, so it isn't that ingredient in the movement relation that triggers them. Let's consider the hypothesis, occasionally ventured, that it is the reconstruction aspect of the movement relation that is subject to islands. We can see evidence for that by considering those resumptive pronouns whose semantic relation to a phrase that binds it seems to be governed by island conditions. When the resumptive pronoun is in an island, it does not permit reconstruction effects, and when it isn't in an island it does. This is the case for Lebanese Arabic, for instance, as reported in Aoun and Benmamoun (1998) and Aoun, Choueiri, and Hornstein (2001).

- (4) a. Təlmüz-a ʃʃitaan btaʔrfo ʔanno kəll mʔallme ʔaaʃaʃət-o.
student-her the-naughty.MS know.2P that every teacher.F punished..3SF-him
(Her naughty student, you know that every teacher punished him.)
- b. * Təlmüz-a ʃʃitaan fallayto ʔablma kəll mʔallme tʔaaʃaʃət-o.
student-her the-naughty.MS left.2P before every teacher.F punished.3SF-him
(Her naughty student, you left before every teacher punished him.)
(Aoun and Benmamoun 1998, (47): 579)

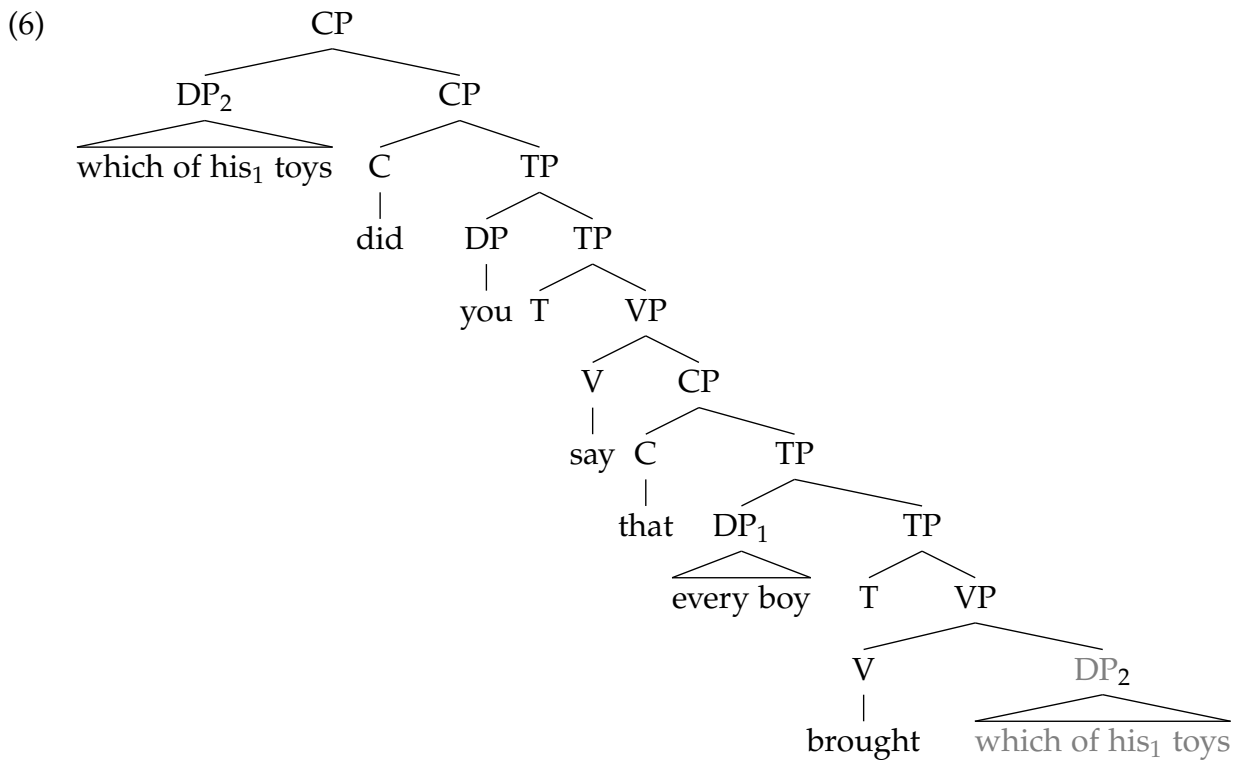
We want islands — whatever they are — to be constraints, then, on reconstruction. Let me defend a modified version of the view that Engdahl (1986) offers for reconstruction, and then return to see the consequences for islands.

2 Reconstruction

We want to produce a way of reconstructing the moved pronouns in (5) into a position where they can be bound by the quantifiers.¹

- (5) a. Which of his₁ toys did you say that every boy₁ had brought?
 b. The picture of his₁ mother that every soldier₁ kept wrapped in a sock (was not much use to him.)

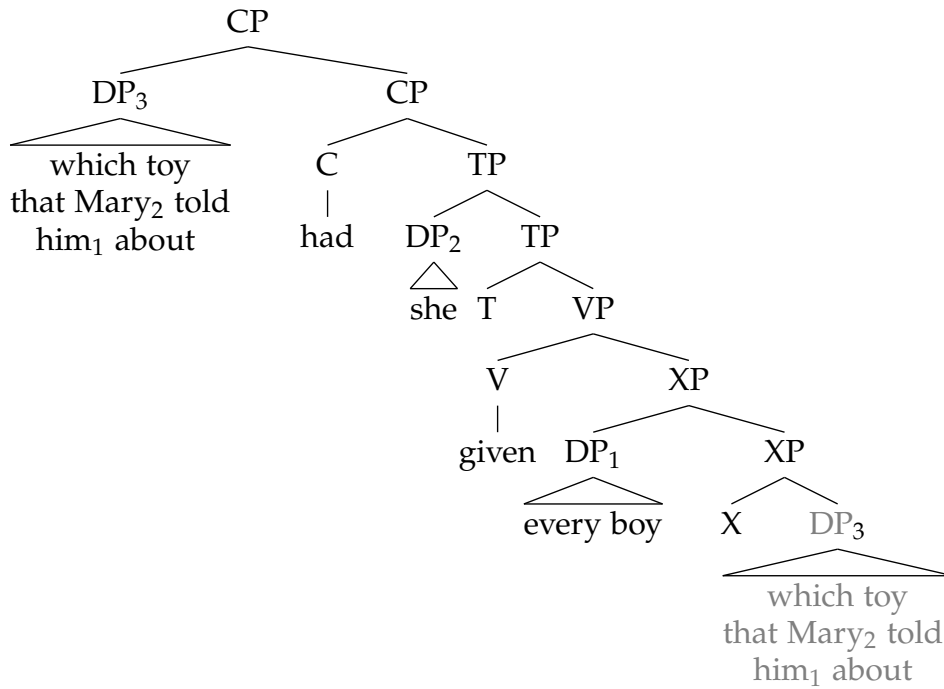
A popular, recent, proposal that gets the semantics roughly right is Fox (1999, 2002, 2003). He adopts Chomsky (1995)'s proposal that movement generates copies of the moved term, and weds this with a theory that seeks to explain how one of those copies is capable of binding the other. To (5a), this would give a representation like (6).



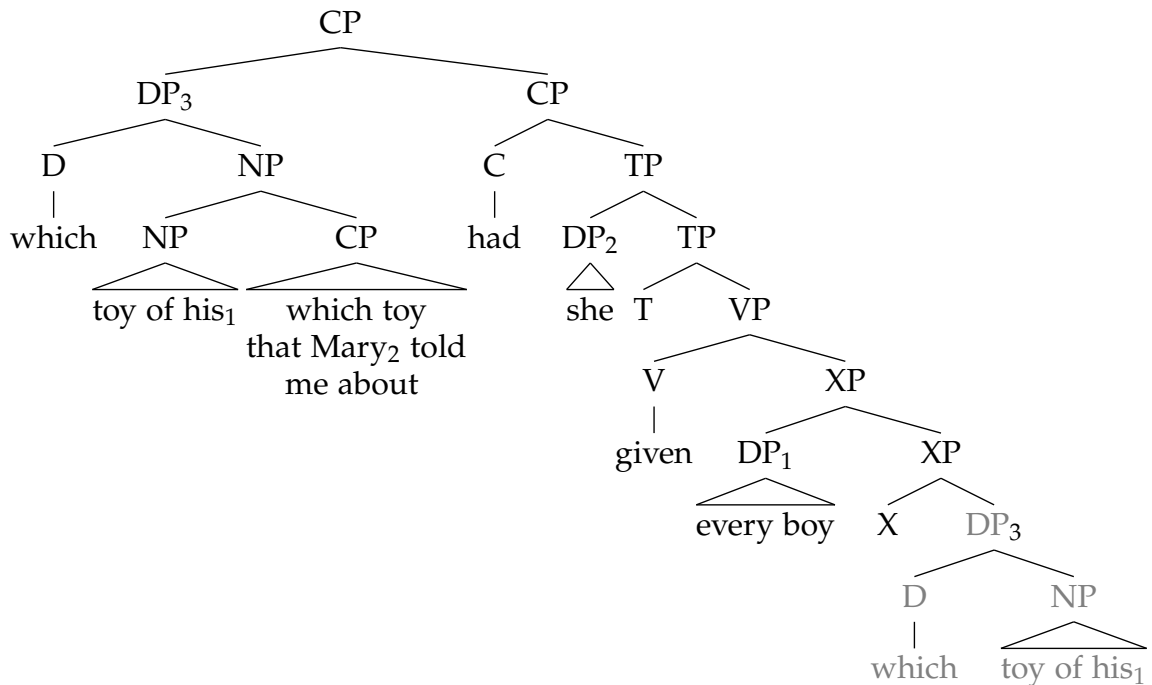
(The unspoken copy is in shaded font.) That reconstruction effects are the result of syntactic representations like this, rather than an artifact of how movement relations are interpreted semantically (cf. Cresti 1995, Rullmann 1995, Sharvit 1998, 1999) is indicated by the sensitivity such effects have to the syntactic organization of the phrase being moved. That can be illustrated with the contrast in (7), roughly fashioned on examples in Heycock (1995) and Fox (1999).

¹ Examples like (5b) can be found in Schachter (1973), Vergnaud (1974), Safir (1999), Bianchi (2000), and Sauerland (1998, 2004), and see Bhatt (2000, 2002). Examples like (5a) are in Engdahl (1982).

- (7) a. * Which toy that Mary₂ told him₁ about had she₂ given every boy₁?



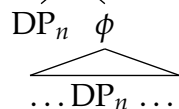
- b. Which toy of his₁ that Mary₂ told me about had she₂ given every boy₁?



The representation in (7b) requires a theory that lets a moved phrase be bigger in its spoken position than it is in its pre-moved position. See Lebeaux (1988, 1990), Fox and Nissenbaum (1999), Fox (2002) and Takahashi (2006b,a) for some discussion and details. To get these syntactic representations to interpret the lower copy as a variable bound by the higher copy, Fox suggests that the following rule of semantic composition be invoked when movement occurs.

(8) TRACE CONVERSION

In ϕ' , interpret ϕ as a function that maps an individual, x , to the meaning of $\phi[x/n]$.



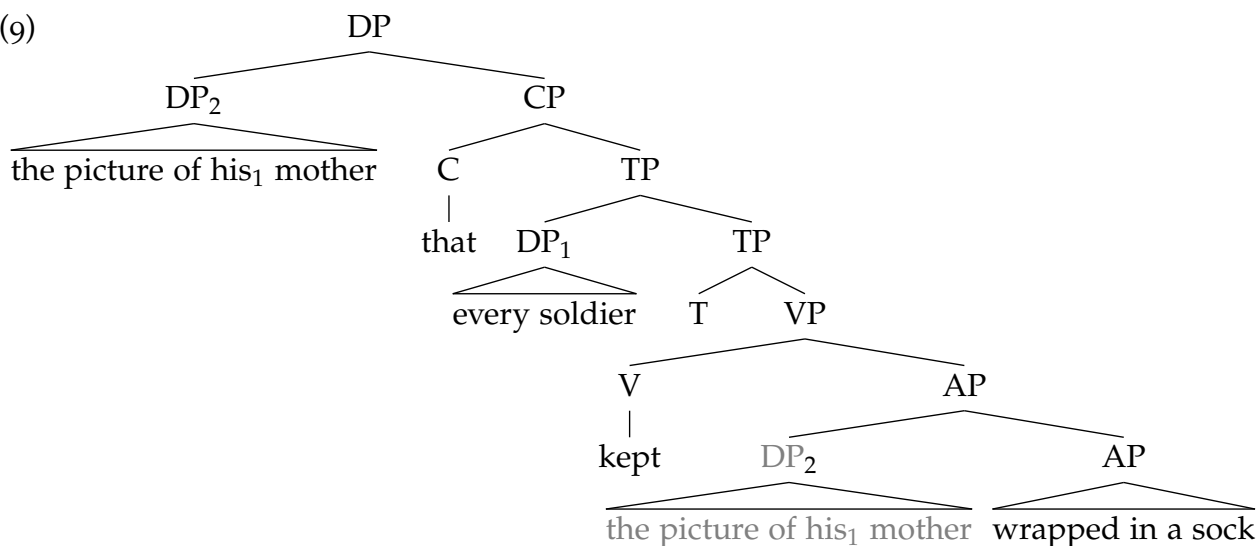
$\phi[x/n]$ is the result of replacing the head of every constituent bearing the index n in ϕ with the head the_x , whose interpretation, $\llbracket the_x \rrbracket$, is: $\lambda P. \llbracket the \rrbracket [P \cap \lambda y. y = x]$.

(slightly modified from Fox 2003, (52): 111)

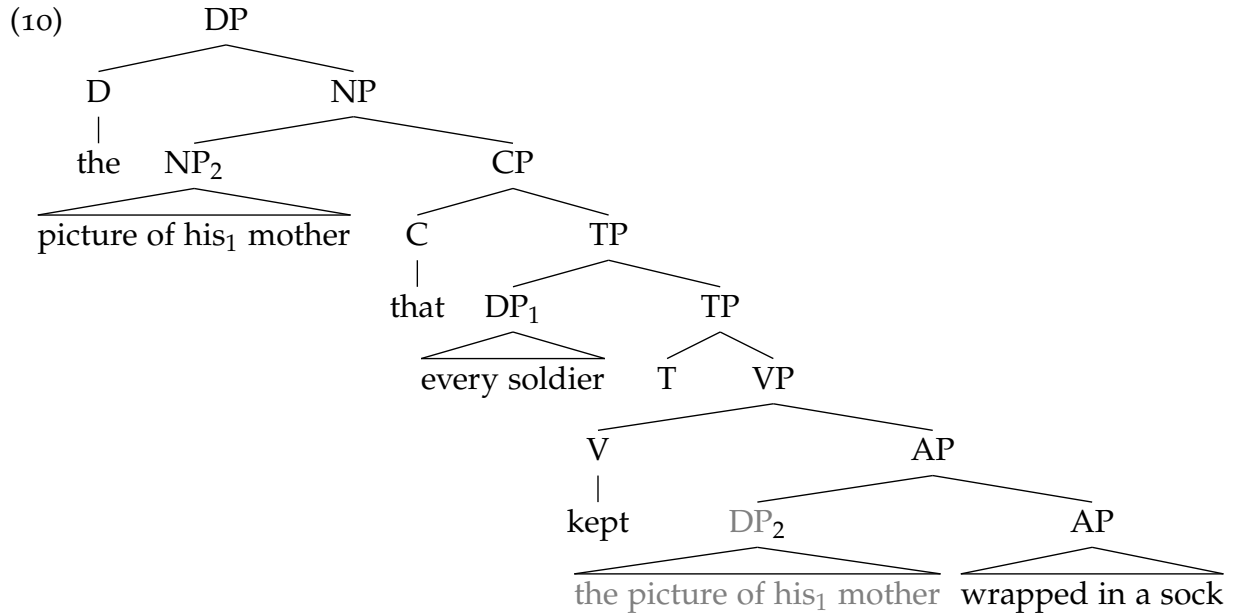
This converts lower copies into definite descriptions, but adds a restriction to those definite descriptions that allows them to refer only to whatever value is given to the index they bear.

The Trace Conversion rule does not straightforwardly work in the relative clause example, though. Because it only applies to situations where a DP has moved, it would require that (5b), for instance, get the representation in (9).

(9)



But, in general, this is the wrong structure for a relative clause. We want the determiner heading the DP to contain in its scope both the NP and the CP parts of the phrase. We want something closer to (10).



The Trace Conversion rule in (8) does not apply correctly to this representation. It also does not extend correctly to cases in which predicates have moved, as in (11).

(11) It's _{VP}read a book which John likes] that I think he can't.

In these kinds of examples, we need to ensure that we get total reconstruction: everything in the spoken copy of the phrase must be interpreted in the lower position. That is what is responsible for producing a disjoint reference effect between *John* and *he* in (11). We need, then, to extend the Trace Conversion rule so that it applies to cases where something other than DPs has moved, and this extension should give us the right semantic effects.

I propose that we combine two ideas.

The first is to replace the Trace Conversion rule with a rule of concord. Imagine, as in Matthewson (2001), that quantificational expressions make use of two functional heads. One has the denotation of quantifiers, and the other is a choice function that provides the domain for the quantification. For concreteness, we can assume this choice function to have just the meaning given to determiners by Fox's Trace Conversion rule. Unlike Matthewson, but like many others, let's separate these two functional heads, putting the term that expresses the quantification in the position where its scope is computed, while the choice function is in construction with the NP.² Let's follow Kratzer (2005) and Adger and Ramchand (2005) and let this dependency be mediated by AGREE. AGREE will make both heads share an index.

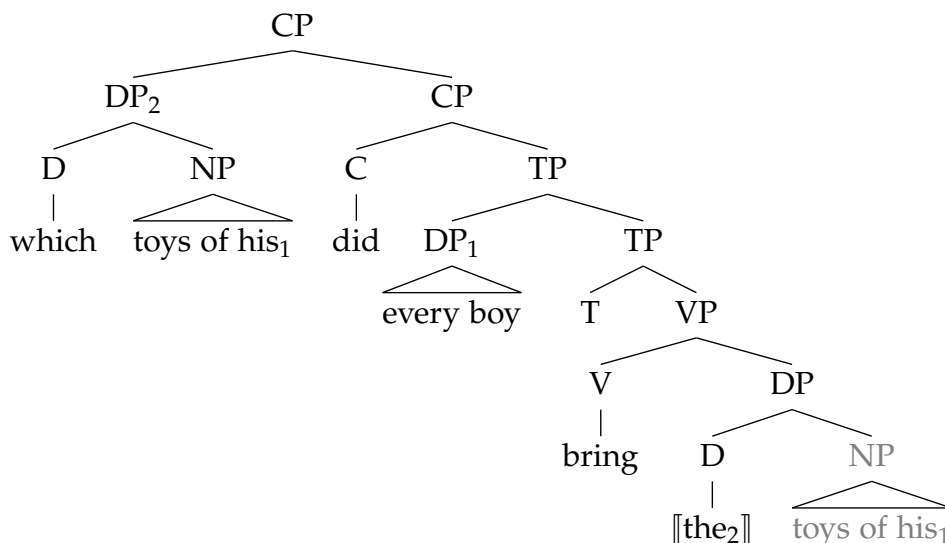
(12) THE CONCORD HYPOTHESIS

The only determiner that supports movement is $\llbracket \text{the}_x \rrbracket$. Its index is determined by the silent Q it agrees with.

This allows us to banish "DP" movement. In its place, we have cases of NP movement, as in (13).

² See, e.g., Williams (1986, 1988), the papers in Szabolcsi (1997), Giannakidou and Merchant (2002), Beghelli (1993, 1995), Sauerland (1998), Hallman (2000, chapter 4), Sportiche (2003), Butler (2004), Kratzer (2005) and Adger and Ramchand (2005).

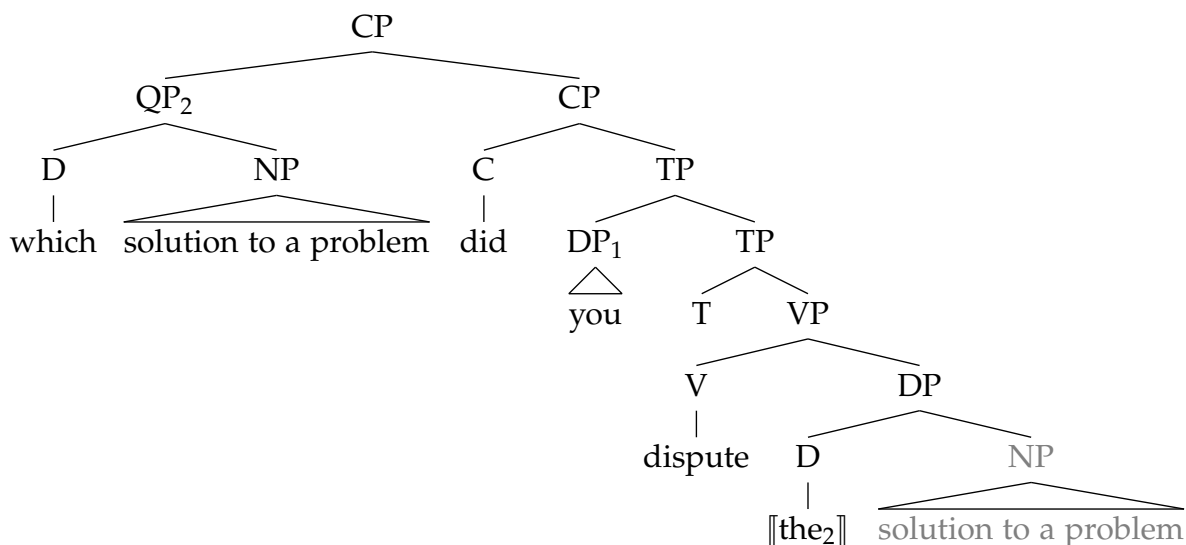
(13) Which toys of his₁ did every boy₁ bring?



Note: $[[the_x]]$ is silent in English. It is pronounced (as a pronoun) in Lebanese Arabic.

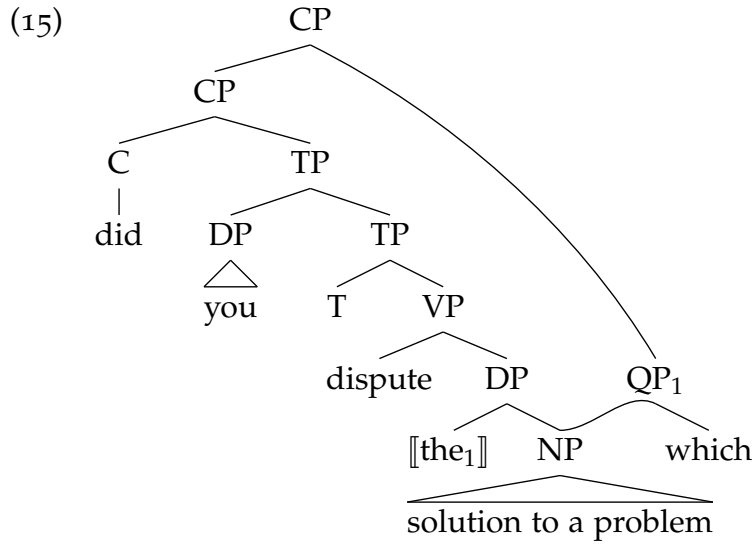
The second idea is to follow Engdahl (1986) and interpret "copies" as a single phrase which stands in more than one position. She uses multidominant phrase markers to represent movement.³ This will address a problem in Chomsky and Fox's interpretation of copies that arises in cases like (14).

(14) Which solution to a problem did you dispute?



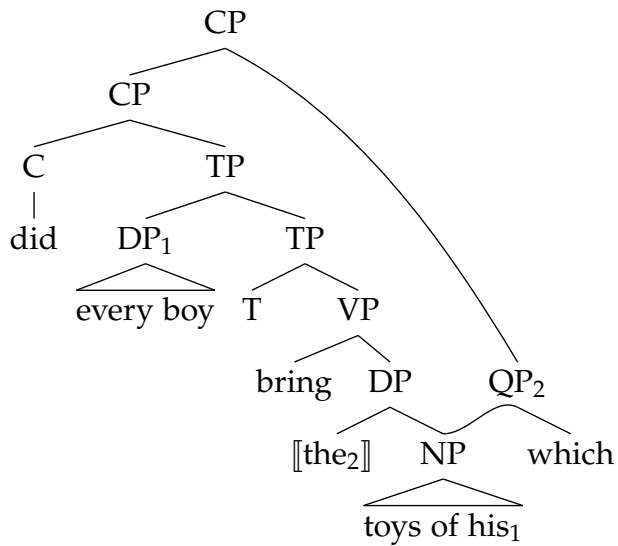
Because there are two indefinites in (14), we might expect it to get an interpretation in which two problems are involved. On an Engdahlian, multidominant, representation, this problem doesn't arise; (14) would have the representation in (15).

³ This idea has been reprised in more recent work. See especially Blevins (1990), Nunes (2001), Epstein (1995), Starke (2001), Frampton (2004), Fitzpatrick and Groat (2005), Gärtner (1997, forthcoming), de Vries (2007), and Citko (2005).



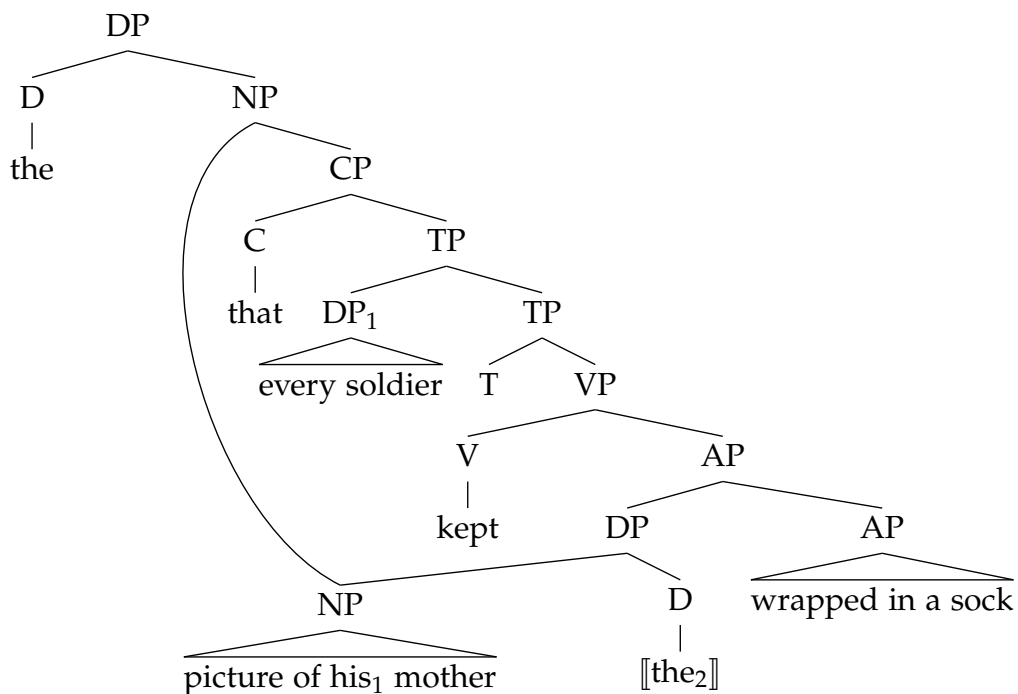
The example in (13) will get the representation in (16).

(16) Which toys of his did every boy bring?



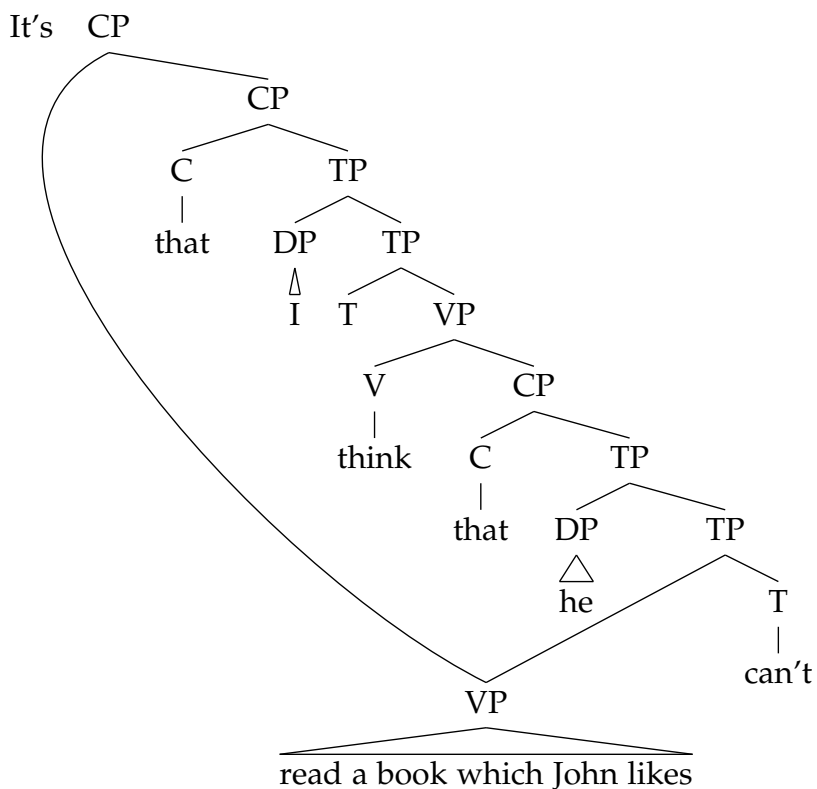
The relative clause example, will get a representation like (17).

- (17) The picture of his mother that every soldier kept wrapped in a sock (was not much use to him.)



And the example in (11) gets the representation in (18).

- (18) It's [_{VP}read a book which John likes] that I think he can't.

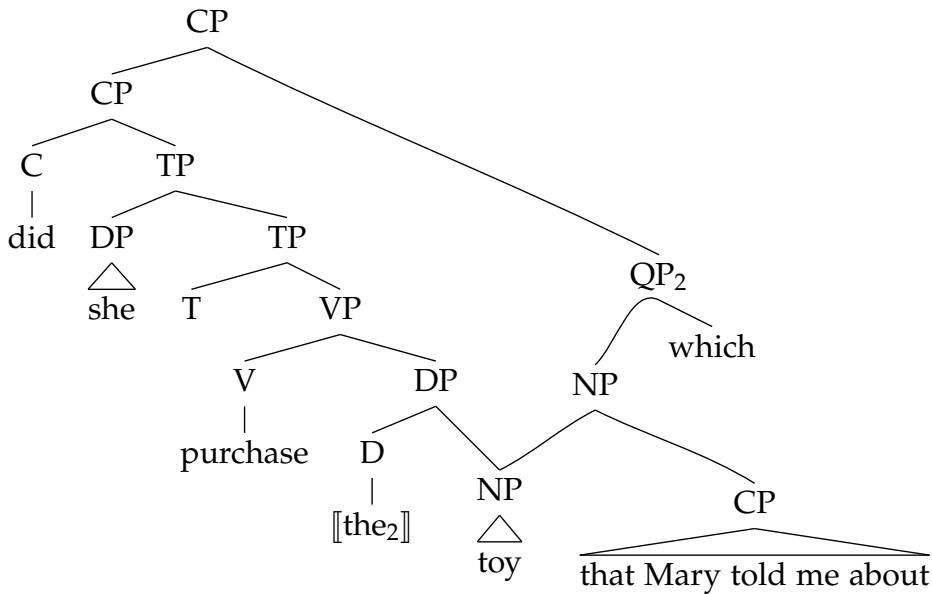


This gives us a handle too on why the kind of thing moved influences where that moved phrase is interpreted. Let a phrase that is given more than one position in a phrase marker be able to be interpreted in any of those positions, subject only to (19), and let the semantic rules of composition determine which positions are ones in which its meaning can be computed.

(19) PRINCIPLE OF FULL INTERPRETATION

If α is part of the sentence S , the denotation of α must contribute to the denotation of S . Plausibly, the rules of semantic composition will allow a fronted predicate to have its denotation composed only in the lowest of the positions it occupies. Thus, in order to satisfy (19), it will have to have a representation like that in (18) and all of the copy will be interpreted in the lower position. By contrast, in the case of *wh*-movement, the semantic requirements of the (silent) quantificational head and the determiner it is in the concord relationship with will demand that the NP which follows them be interpreted in both of the positions it occupies. This will allow for a representation, like that in (20), in which violations of Principle C are side-stepped.

(20) Which toy that Mary₂ told me about did she₂ purchase? (\approx (7b))



We can also get closer to making sense of the idea in Nunes (1995, 1996, 1999) that the reason more than one copy is not pronounced is because the laws of linearization do not treat the copies as distinct. To see in detail how that works would require looking at a linearization scheme that spreads the good results of present schemes to geometries with multidominance. We can see what the outlines of such a scheme would have to be. We could relax (21b) when it conflicts with (21a), for instance.⁴

(21) a. Consistency

For every pair of spoken terminals in a phrase marker, $\alpha, \beta, \neg(\alpha < \beta \wedge \beta < \alpha)$.
 (“ $<$ ” means precedes.)

b. Contiguity

Let $\psi = \{x_1, x_2, \dots, x_n\}$ be terminals in β .

If γ precedes an element of ψ and follows an element of ψ , then $\gamma \in \psi$.

c. Consistency \gg Contiguity

⁴ See Epstein (1995) for a system that makes this explicit.

(21a) is part of a set of conditions that describe consistent linearizations, and (21b) prohibits crossed branches. Consistency will force phrases with two mothers to get pronounced in only one of their two possible positions, and Contiguity will ensure that whatever choice is made will be made for all of the terminals in that phrase.

3 Islands

Islands are those phrases, α , for which (22) is true.

- (22) Let $D = \{\beta_1, \beta_2, \dots\}$ be everything that α dominates. α is the only thing that isn't an element of D that dominates an element of D .

If MERGE is the name we give to the operation that puts phrases into phrase markers, then we could restate (22) with (23).

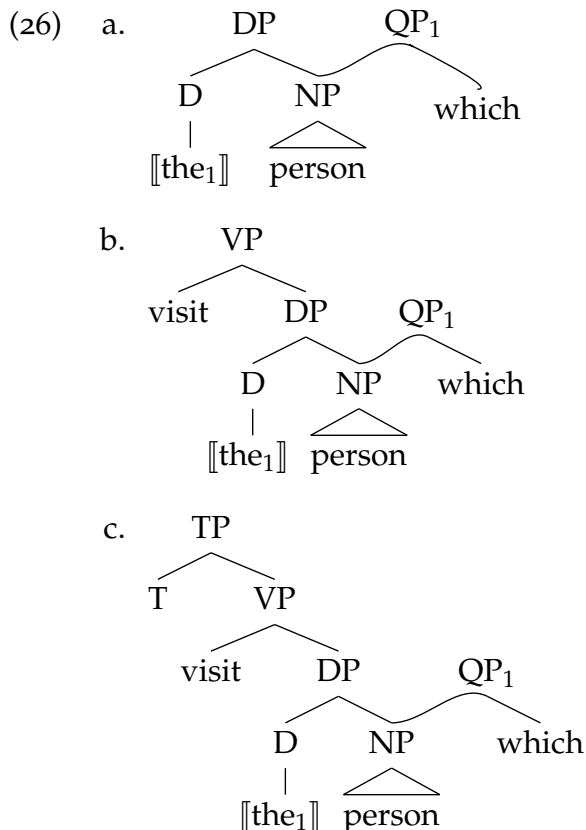
- (23) If MERGE cannot apply to the contents of α , α is an island.

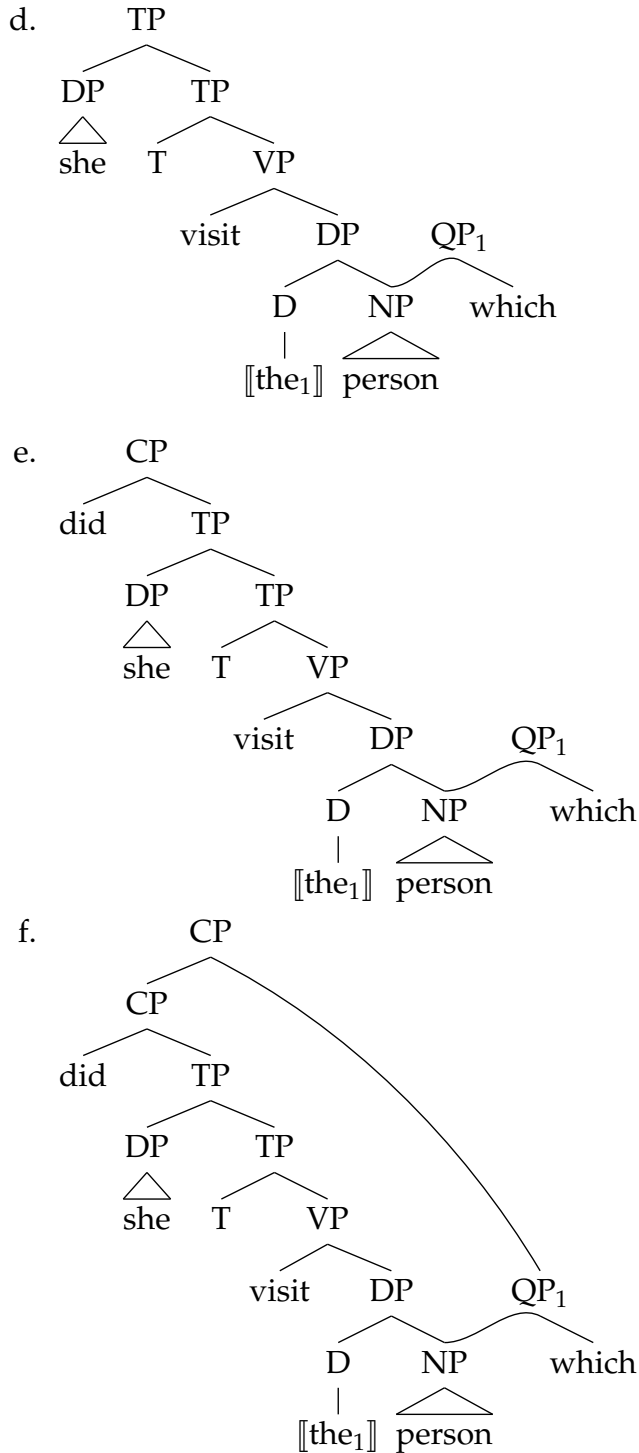
A direction I find interesting is one that would not allow MERGE to see the contents of any phrase, but to define it so that it can bring more than two things together.

- (24) $\text{Merge}(\alpha)(\beta_1, \beta_2, \dots, \beta_n) = \{\alpha, \beta_1\}, \{\alpha, \beta_2\}, \dots, \{\alpha, \beta_n\}$.
 α and β must be a root node.

Consider now the derivation that this will give to a simple case of wh-movement like (25).

- (25) Which person did she visit?





If derivations like these can be spread to the cases involving relative clauses and topicalized predicates, then we can define islands this way:

(27) An island is a substructure that must have one root.

I think it is plausible that multi-rooted phrase markers cannot be assigned a single denotation, nor are they phrase markers that can be linearized into a single string. If that is correct, we can translate (27) into (28).

(28) An island is a phrase that must deliver a single denotation or produce a single string.

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