

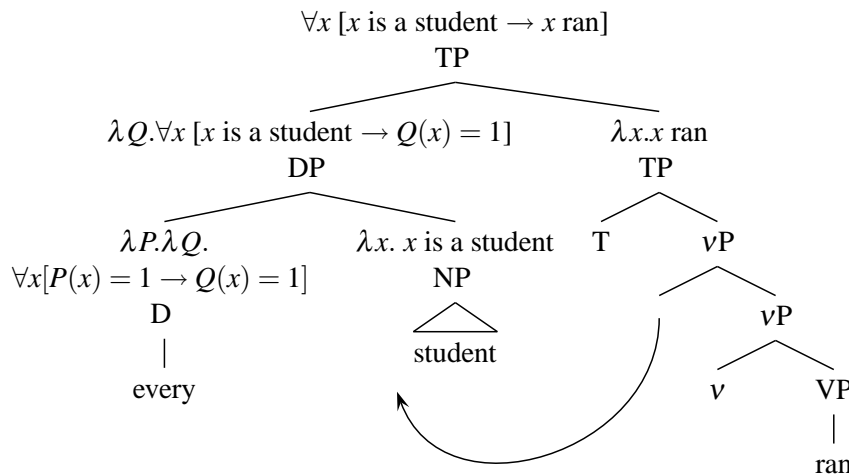
Determiners and Movement*

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A commonplace treatment of determiners has it that they name relations between predicates of individuals. In (1), for example, *every* says that the set of students is included in the set of things that ran.¹

(1) Every student ran.



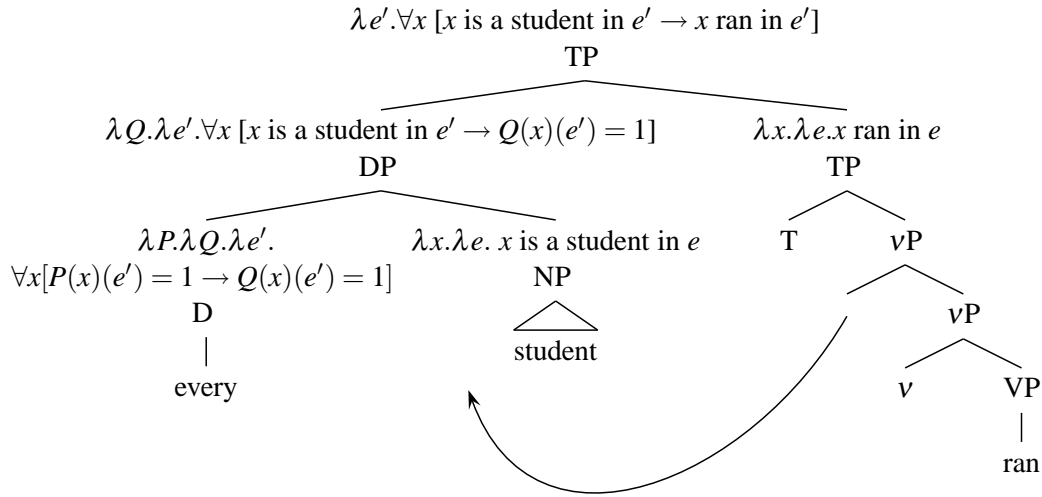
There are two kinds of modifications to this view that are required. One is made necessary by the discovery that predicates are not simple descriptions of individuals, but instead describe events.² Instead of (1) we require something along the lines of (2).

*My thanks to Satoshi Tomioka, Jan Anderssen, Shoichi Takahashi, Angelika Kratzer, Emily Elfner, Margaret Grant, Jesse Harris, Misato Hiraga, Wendell Kimper, Pasha Siraj, Martin Walkow, Yoko Hattori, Yumi Kawamoto and the participants of the conference.

¹ See Barwise and Cooper (1981). I will give TP and vP the same denotations in this talk. This seriously misrepresents things, but it also greatly simplifies matters in a way that allows us to concentrate on the quantification introduced by determiners. I will also systematically obscure the independent contributions of the lexical verbs and voice, represented here with *v*.

² See Davidson (1967), Parsons (1990), Higginbotham (1983), Schein (1993), Kratzer (1996), Harley (1995), Rothstein (2004) and many others.

(2) Every student ran.

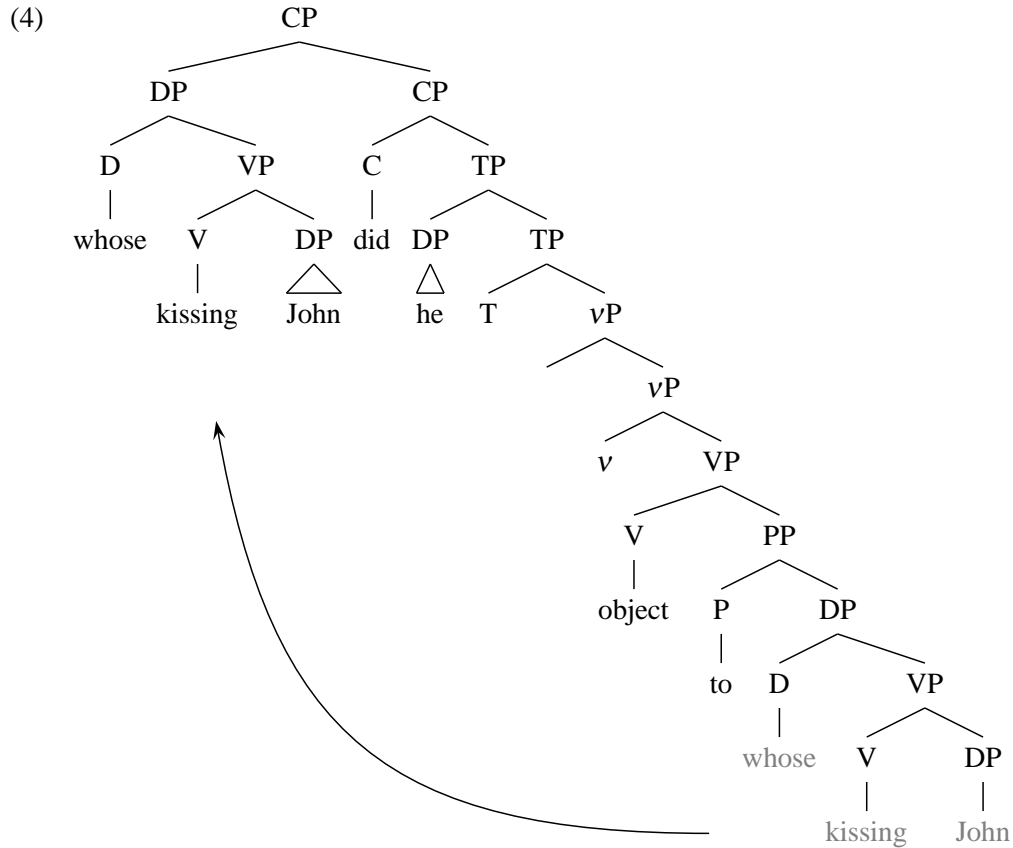


The other comes from the study of reconstruction effects, in which a moved DP seems to be interpreted in two positions. (3) illustrates such an example. Under treatments of constituent questions that claim that the interrogative phrase is semantically interpreted in its surface position,³ the disjoint reference effect between *John* and *he* in (3) indicates that the moved phrase is interpreted in the position it moved from as well.

(3) * Whose kissing John₁ does he₁ object to?

Chomsky (1993) suggested that these effects arise because movement produces “copies” of the phrase being moved and that all such copies are interpreted semantically. On this view, the representation (3) would get is (4).

³ And this is indicated by the ability of examples such as *They asked which pictures of each other she liked to meet the locality requirements that hold between reciprocals and their antecedents.* See Barss (1986).



I adopt here the convention of indicating that a copy is unspoken by putting it into a shaded font. The disjoint reference effect arises in (3), then, because one copy of *John* is c-commanded by *he* in (4) and this is the configuration that triggers disjoint reference effects. This “copy theory” of movement appears to be the most successful account of such phenomena, so I will adopt it. It raises some questions. There are two I will try to answer in this talk, and they are:

- (5) Why is only one of the copies pronounced?
- (6) How are the two copies interpreted so that one binds the other?

The present answer to (6) is in Fox (1999, 2002, 2003) (see also Sauerland (1998)) and it has the consequences for the treatment of determiners that I am interested in. It is expressed in terms of a semantics like that in (1) which treats determiners as relations between predicates of individuals. I’ll begin by reviewing Fox’s proposal, modifying it slightly so that we get an answer to (5). Then I will translate it into an event-based semantics that makes use of an approach to quantification in Elbourne (2005). The result is a view that splits up the meaning of determiners, and in this respect has elements in common with the papers in Szabolcsi (1997), and also Williams (1986, 1988), Beghelli (1993, 1995), Sportiche (2003), Hallman (2000), Butler (2004), and Kratzer (2005). It’s different in its details, however, and

I think better equipped to make sense of the “apparent” resumptive pronouns discussed in Aoun, Choueiri, and Hornstein (2001) (see section 4) as well as the cases in which copies are claimed to be doubled. We’ll begin by considering how to interpret copies so that reconstruction effects are captured.

1 Trace Conversion

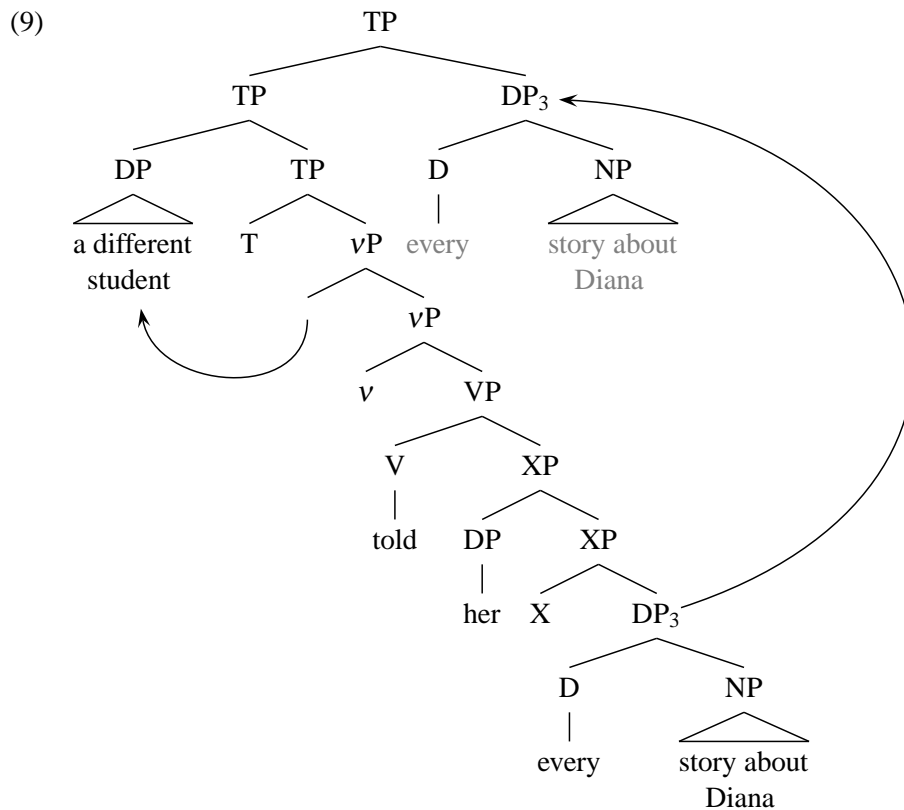
Another context where the sort of reconstruction displayed in (3) is found are cases of Quantifier Raising, like that in (7).

- (7) * A different student told her₁ every story about Diana₁’s parents.

The *every story* DP can have the subject in its c-command domain. We know that because the subject in (7) can get an interpretation that’s only available when *different* is c-commanded by the universally quantified DP, as (8) shows.

- (8) a. Every woman talked to a different student.
 b. * [Her visit to every woman] disturbed a different student.
 c. * A different student cried after every woman left yesterday.

But at the same time, the *every story*-DP must be within the c-command domain of *her*; that we know because there is a disjoint reference effect between *Diana* and *her*. We must therefore let movement create a representation for (7) like that in (9).



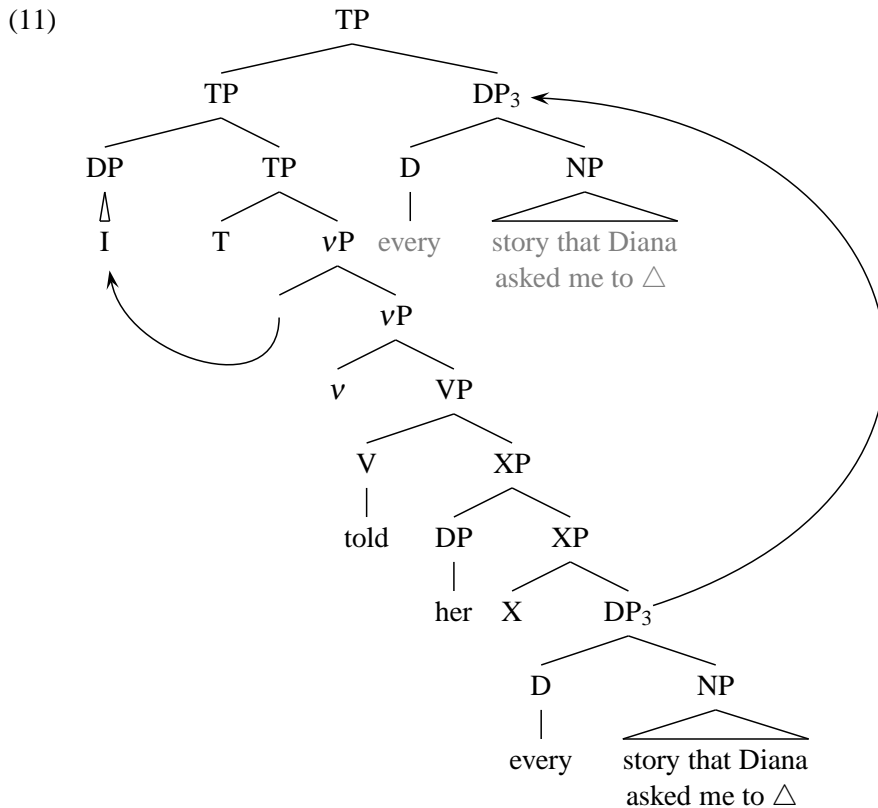
As in (3), this representation places one copy of *Diana* within the c-command domain of *her*, and therefore correctly produces the environment for disjoint reference. The only difference between (3) and (9) is which copy gets pronounced. In (9) it is the lower copy, while in (3) it is the higher one. This paper focuses on cases like (9).

A feature of this representation that will be important for what follows is that the higher, unspoken, copy contains the NP that we see in the lower, spoken, copy. On some accounts of these cases, the higher copy contains only the quantifier and not the NP. I will therefore report the argument from Fox (2002) for this feature of the proposal.

Fox's argument comes from a phenomenon discovered by Fiengo and May (1994). There are situations where the disjoint reference effect that (7) illustrates are overcome. If the name is within a relative clause that is forced by ellipsis to be interpreted outside the phrase that contains the coreferent pronoun, as in (10), then the disjoint reference effect is modulated.

- (10) ? I told her₁ every story that Diana₁ asked me to Δ .
 Δ = tell her *x*

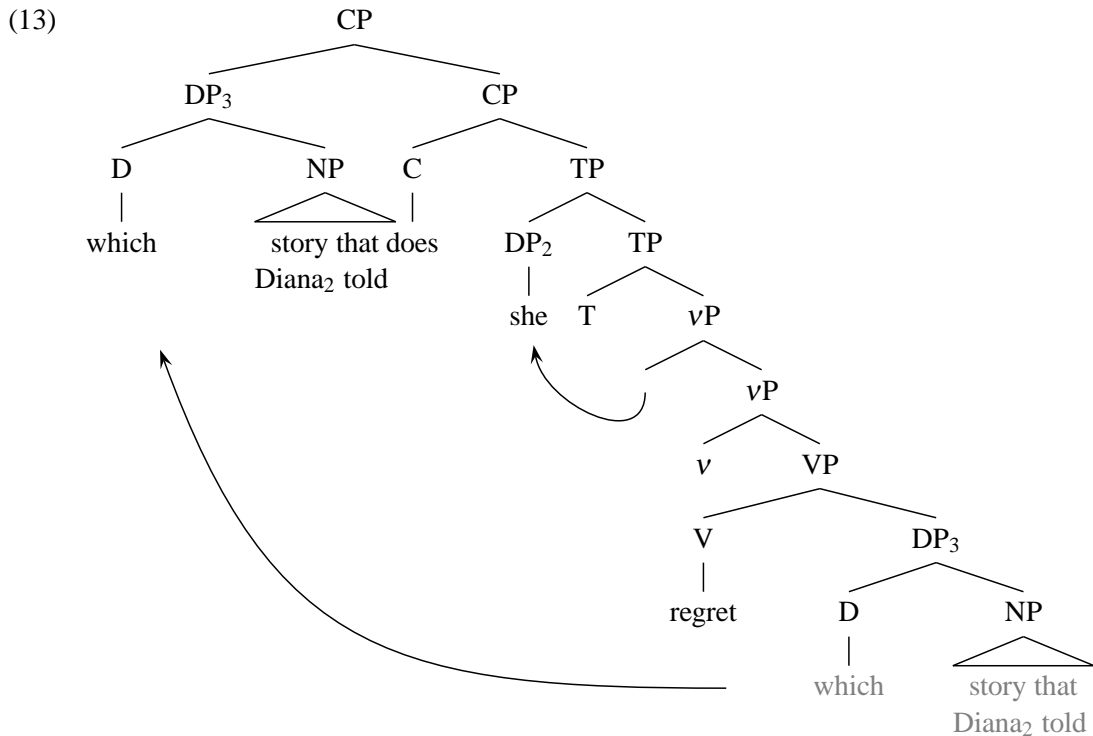
The ellipsis in (10) appears to lie within the VP that serves as its antecedent, and this produces well-known problems. Thus, both the disjoint reference effects and the presence of ellipsis indicate that the copy theory of movement cannot have its normal outcome in this case:



There is a parallel phenomenon in cases of movement that form questions. Unlike (3), where a name inside a moved *wh*-phrase is interpreted in its lower position, examples where a name is within a relative clause in a moved *wh*-phrase do not trigger parallel disjoint reference effects; (12) is such a case.

(12) Which story that Diana₁ told does she₁ now regret?

Without modification, the copy theory of movement would also wrongly give this sentence a representation in which a *Diana* falls within the *c*-command domain of *she* with an accompanying disjoint reference effect.



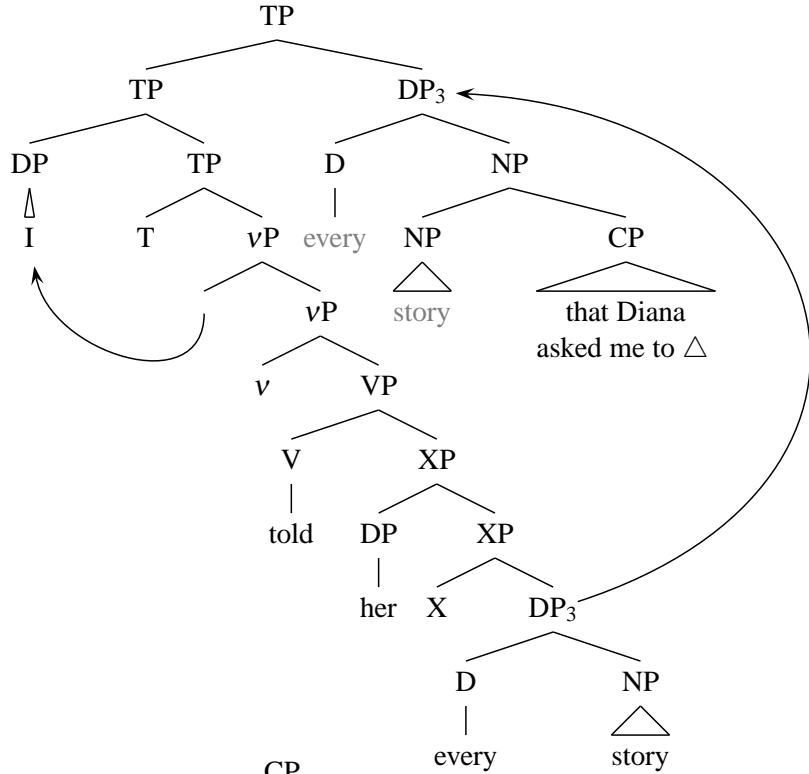
The solution to both cases is to allow for a derivation that involves the following steps.

- (14) Late Merger
- a. Build the D+NP phrase that will move
 - b. Move that D+NP
 - c. Build and attach the relative clause to the higher copy only.

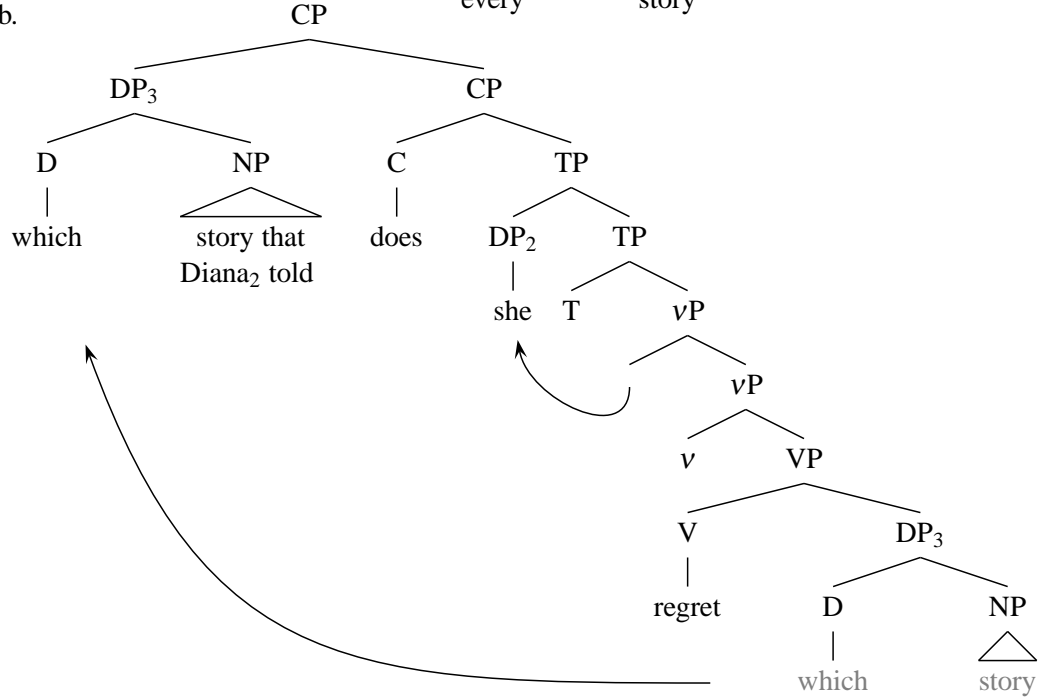
This is David Lebeaux's solution,⁴ and it is adopted by Fox. These derivations would give to (10) and (12) the representations in (15).

⁴ See Lebeaux (1988), and also Freidin (1986).

(15) a.



b.



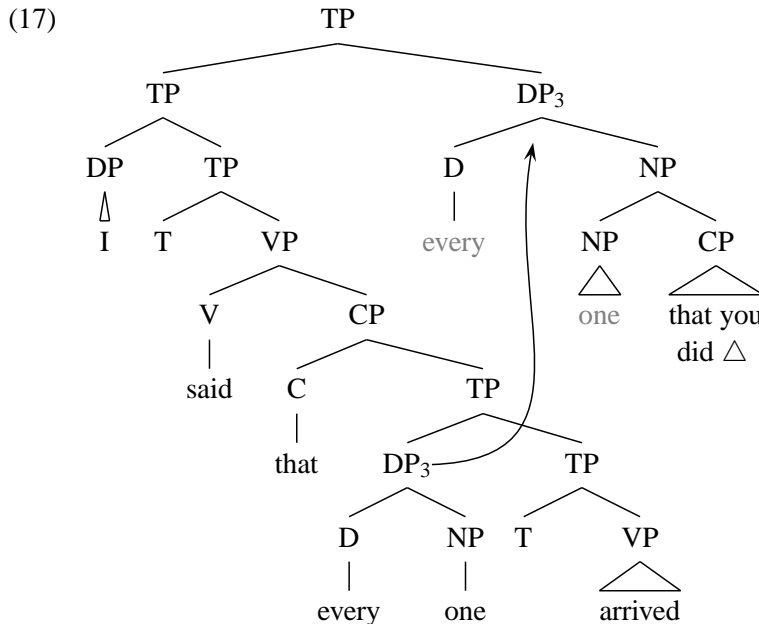
As (15) indicates, this account claims that in (10) the relative clause is not in the spoken copy of the object, but is instead part of the higher, unspoken, copy. It's this part of the

account that serves as evidence that the higher, unspoken, copy in such cases contains the NP part of the object. That is necessary because under standard assumptions, a restrictive relative clause of this kind must attach to an NP to produce the right meaning. Fox (2002) produces a variety of arguments that the relative clause in such examples is indeed not in the spoken copy of the DP. (See also Baltin (1987), and Fox and Nissenbaum (1999) for arguments that “extraposition from NP” has the syntax in (15a).) One of these is based on the contrast in (16), from Tiedeman (1995).

- (16) a. *I said that everyone you did Δ arrived.
 Δ = say that x arrived
- b. I said that everyone arrived that you did Δ .
 Δ = say that x arrived

(Fox 2002, (35b), (36b): 77)

Just as this proposal predicts, the relative clause containing an elided VP cannot be spoken within the antecedent VP. That is what makes (16a) ungrammatical. Instead, that relative clause must be spoken in a position outside the antecedent VP and, more particularly, as part of the material that determines the scope of the quantificational DP the relative clause modifies. That’s what’s happened in (16b), which has the representation in (17).



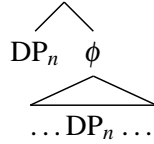
For this account to be complete, it requires an explanation for when late merger derivations are possible and when they are not, for otherwise all of the effects gained by the copy theory of movement will be lost. See Takahashi (2006) for many steps in this direction.

We’re now ready to see Fox’s proposal for interpreting copies. He suggests that movement creates not only copies of the phrase that is moved, but also that it appends the same

index on all of them. He then devises the following rule for interpreting structures with movement indices in them.⁵

(18) TRACE CONVERSION

In ϕ' , interpret ϕ as a function that maps an individual, x , to the meaning



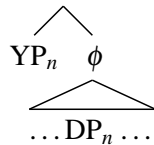
of $\phi[x/n]$.

$\phi[x/n]$ is the result of replacing the head of every constituent with 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 rule expresses the standard method of interpreting a binder.⁶ It gives the phrase that the binder combines with the denotation of a lambda-abstract. That part of the rule could be formulated as (19).

(19) In ϕ' , change the denotation of ϕ to $\lambda n. \phi$.



But the rule weds that process with one that rewrites the meaning of the copies inside ϕ . The new meaning is one that is like a definite description, but with a variable bound by the lambda-operator introduced in the other part of the rule. It has the effect of turning a lower copy of “[DP_3 every story],” for example, into:

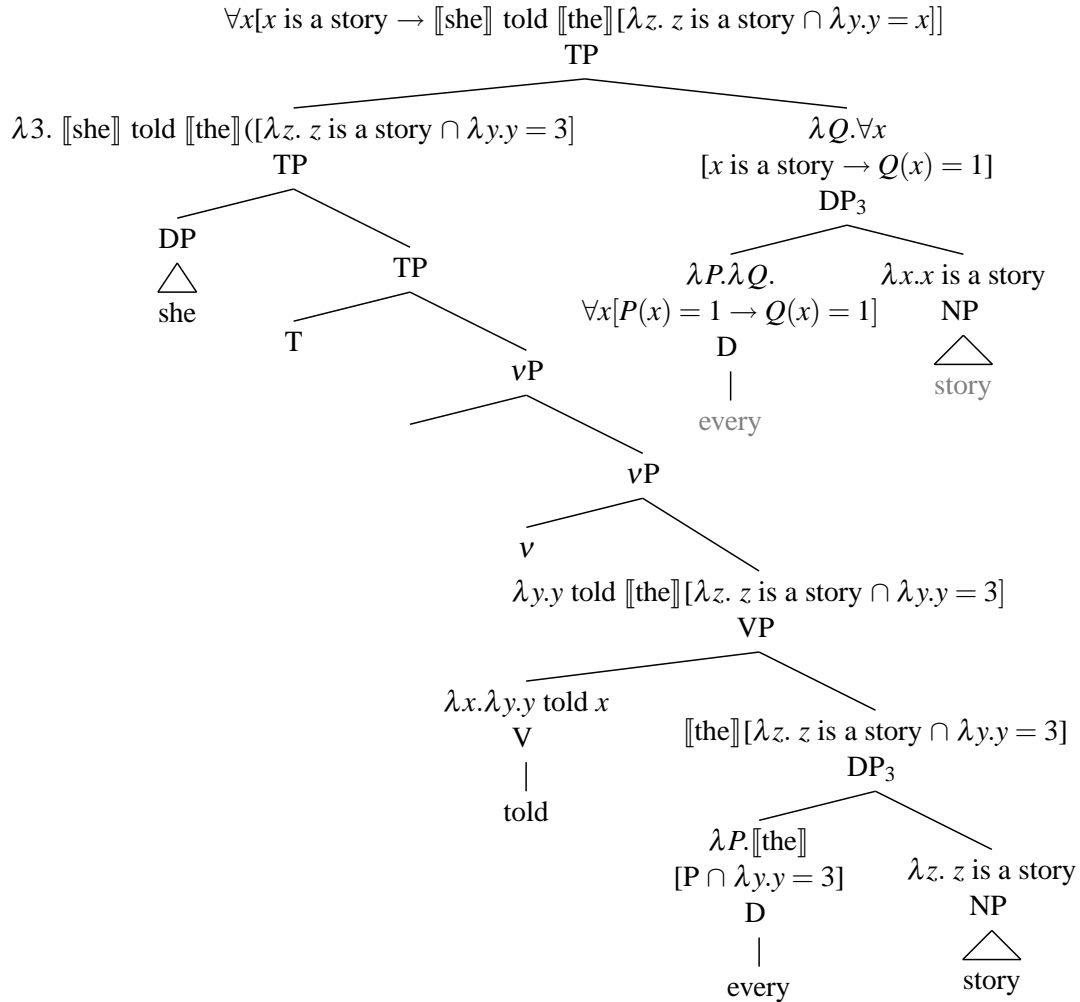
(20) [DP_3 every story] \rightarrow the story that is 3.

With Trace Conversion, then, a simple example like (21) will get an interpretation like that shown.

⁵ See also Sauerland (2004) for an examination of alternative ways of formulating this rule.

⁶ See, for example, Heim and Kratzer (1998).

(21) She told every story.



A clumsy paraphrase for the denotation of this sentence is:

(22) For all x, if x is a story, then she told the thing that is a story and x.

Trace Conversion turns determiners of lower copies into kinds of restricted variables, then. It works for all of the cases we've viewed so far, and it arguably extends correctly to all cases in which a DP has moved. As noted at the outset, it's built upon a view of determiner quantification that has them relate properties of individuals. It still requires translation into a framework in which predicates describe events. But before we do that, let's tackle the question of what "copies" are.

2 Multidominance

Fox's Trace Conversion has the undesirable property of letting a whole class of lexical items be ambiguous: in the cases we're examining, those lexical items are determiners. It resolves that ambiguity by syntactic rule. It claims that the meanings of determiners are not fixed, but change according to their position. It gives syntax the power to change lexical content. That's more than syntax should be allowed. So let me offer a variant of Fox's proposal that avoids these consequences.

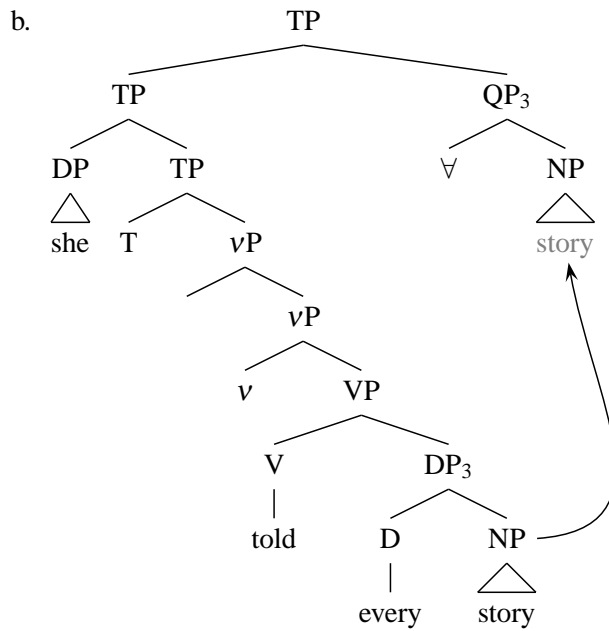
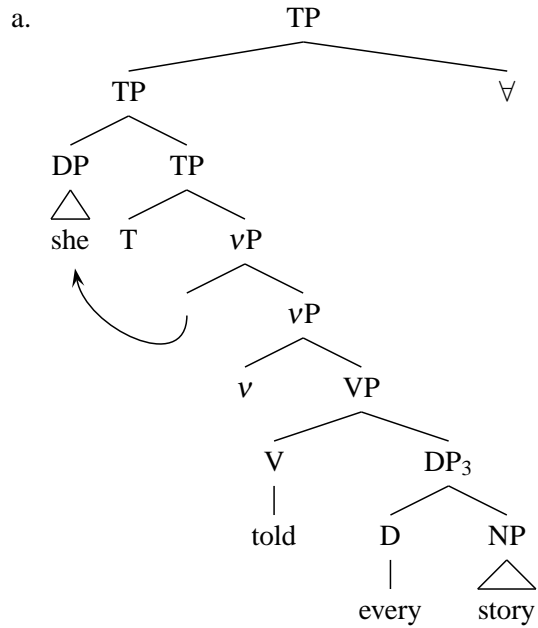
This variant builds on ideas many have had about the syntax of quantification.⁷ Perhaps it's closest to ideas in Beghelli (1993, 1995), Sauerland (1998), Sportiche (2003), Butler (2004), Kratzer (2005) and Adger and Ramchand (2005). Imagine, as in Matthewson (2001), that quantificational expressions make use of two functional heads. One has the denotation of quantifiers, and the other is something with the meaning given to determiners by Fox's Trace Conversion rule. Unlike Matthewson, but like those cited above, 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. The morphological form of the definite determiner varies depending on the quantificational term. Let's follow Kratzer (2005) and Adger and Ramchand (2005) and let this dependency be mediated by AGREE. AGREE will determine the morphological form of the choice function part, and make both heads share an index. On this view, then, there is only one determiner — the one that Fox's Trace Conversion creates — with a morphological form that is fixed by AGREEing with a silent quantifier.

- (23) The only (quantificational) determiner is $[[\text{the}_x]]$. Its morphological form is determined by the silent Q it agrees with.

This proposal would give to (24) the derivation indicated. (I will use “ \forall ” to represent the silent universal quantifier that AGREES with *every*.)

⁷ See, e.g., Williams (1986, 1988), the papers in Szabolcsi (1997), Giannakidou and Merchant (2002), and Hallman (2000).

(24) She told every story.



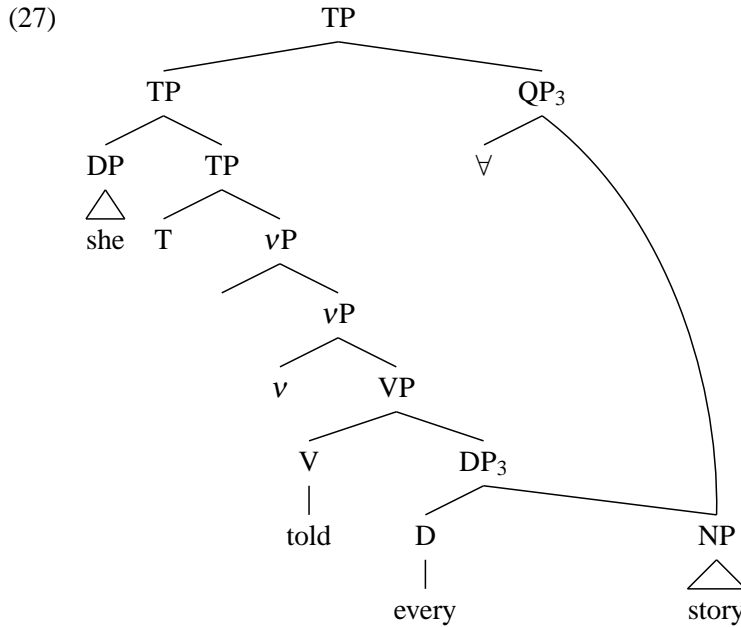
Let's now consider what the copies are in the copy theory of movement. There are two criteria that any successful characterization of copies must meet.

- (25) a. Only one copy should be able to be pronounced.
- b. Every copy must be absolutely identical.

One proposal that achieves both these goals is (26).

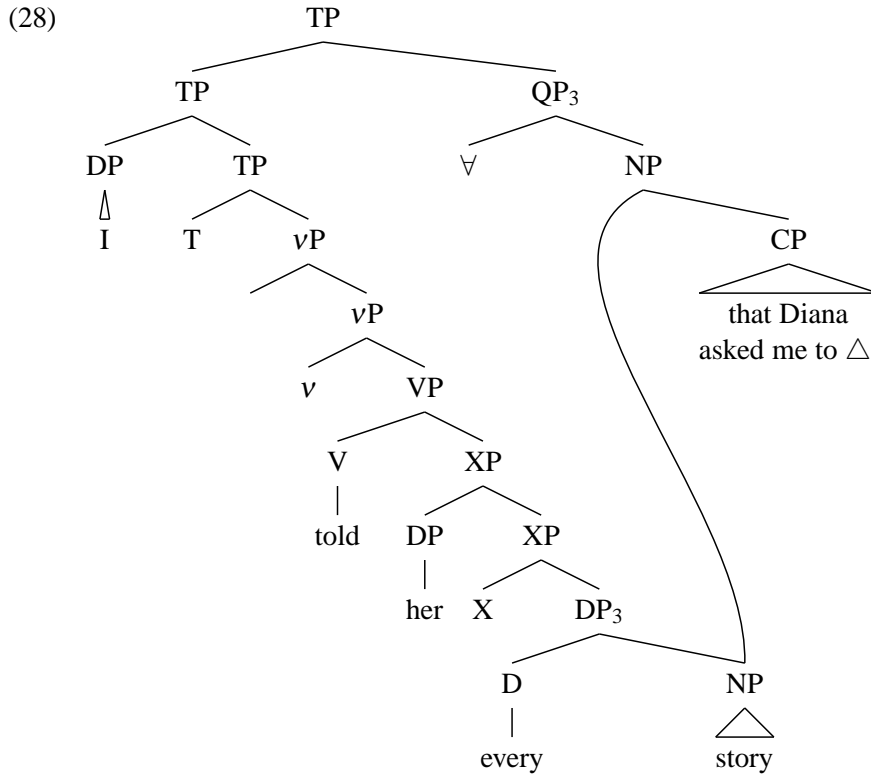
(26) Copies of α are one and the same α in different syntactic positions.

A simple implementation of this idea is to let phrase-markers allow for multidominance, i.e., relax the requirement that a term have no more than one mother (see Nunes (2001), Starke (2001), Frampton (2004) and Fitzpatrick and Groat (2005) for recent proposals along these lines, and Citko (2005) for an application of the idea to across-the-board movement). This would give to (24) the representation in (27).



An example involving late merger, such as (15a), will get a representation like (28).⁸

⁸ Heidi Harley asks by what derivation a representation like that in (28) could be manufactured. If we assume that the basic tree building operation is MERGE, as in Chomsky (1995), then we seek a derivation that involves nothing more than bringing two terms together to form a set. I suggest that (28) is achieved, then, by way of a derivation in which at one point *story* has two mothers: one containing *every* as well as *story*, and another that contains the relative clause as well as *story*. It's this second phrase that will merge with ∇ to form the QP in the higher position.

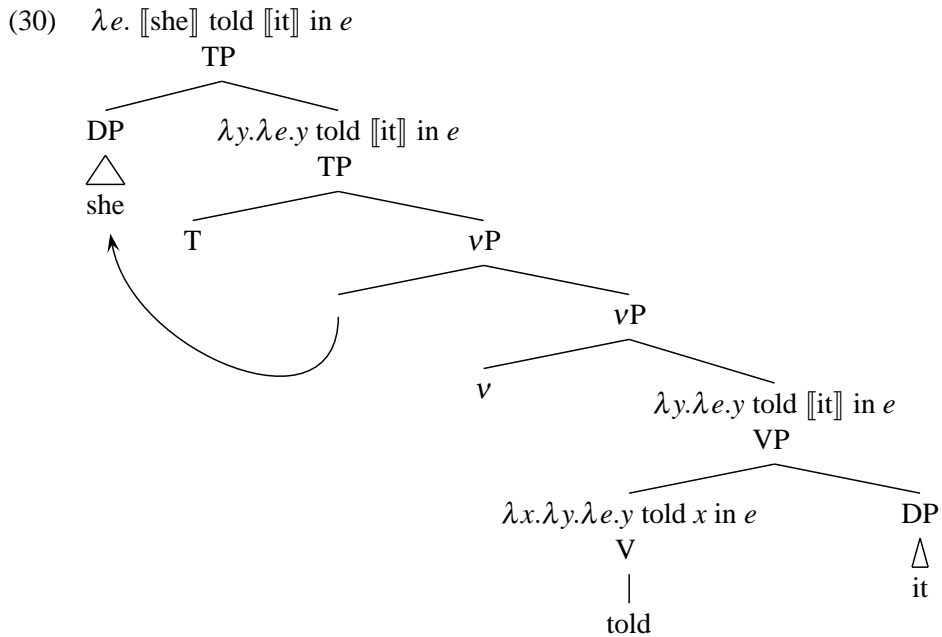
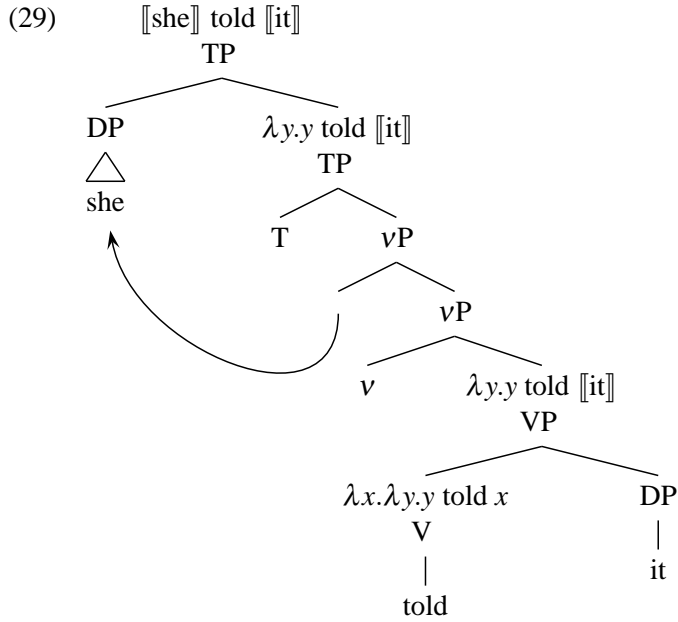


These representations ensure that every copy has exactly the same material in it, and that the semantic contribution it makes is precisely the same in each position. It also provides a way of deriving that only one copy may be pronounced, along the lines described in Nunes (1995, 1996, 1999). The procedure that maps syntactic structures onto strings will (sometimes) get conflicting information from phrases that have more than one mother. In those cases, that procedure will have no choice but to resolve the conflicting information so that it puts such a phrase in just one of the positions it occupies.

We're now ready to consider how this modified version of Fox's system might be translated into a set-up where the predicates involve describe events.

3 Events

There is now considerable evidence that predicates like *ran* do not describe properties of individuals, as in (29), but instead relate individuals to events, as in (30).



On this view, sentences refer to the events in which the relations named by their predicates hold of the arguments those predicates combine with. The account sketched in the previous two sections is built upon a non-event view of sentence meanings and won't work with an event based semantics as it stands.

It's not hard to modify what we've got so that it fits a event-based semantics. Elbourne (2005) incorporates Fox's Trace Conversion rule to his event-based study of quantification.

He provides a comprehensive semantics for definite determiners that allows them to have the very meaning that Fox suggests as a special case. On his view, as on Fox's, the movement operation will involve not only producing copies — multidominated NPs, if I am correct — but also cause the index on the lower copy to be the same as the index on the higher copy. The semantics associated with the Trace Conversion rule will then apply giving the correct interpretations.

I want to explore a different possibility here. I will use Elbourne (2005) as my model, but focus on his account of definite descriptions that, though not bound, nonetheless behave like variables related to an antecedent. One example of this sort is (31).

(31) Every man who owns a donkey beats the donkey.

In (31), *the donkey* is anaphoric on the donkeys described in the subject: the donkey each man beats is the donkey that he owns. This can be achieved by letting the universal quantifier associated with *every* quantify over the events that *man who owns a donkey* and *beats the donkey* describe. Simplifying somewhat, Elbourne's proposal is that \forall has the denotation in (32).

(32) $\llbracket \forall \rrbracket = \lambda f_{\langle e, \langle s, t \rangle \rangle} . \lambda g_{\langle e, \langle s, t \rangle \rangle} . \lambda s$. for every x and every minimal s' such that $s' \leq s$ and $f(x)(s') = 1$, there is a minimal s'' such that $s' \leq s'' \leq s$ and $g(x)(s'') = 1$.
(compare: Elbourne 2005, section 2.2.4)

The variables s, s' & s'' range over "situations," which we can equate with events, and " \leq " is the reflexive part-of relation. (32) says that \forall takes two relations between individuals and situations (*qua* events), f and g , and describes those situations, s , in which, for every x , all of the smallest sub-situations of s that contain x and make f true are part of the smallest sub-situation of s that contains x and makes g true. What this will do in the case of (31) is give it a meaning that can be paraphrased with (33).

(33) There is a situation, s , such that for every x and every minimal situation s' in s such that x is a man who owns a donkey in s' , there is a larger minimal situation, s'' in s that contains s' such that x beats the donkey in s'' .

A looser, but perhaps more revealing, paraphrase is (34).

(34) For every x , all of the minimal situations of a man, x , owning a donkey are part of a larger minimal situation in which x beats the donkey.

The notion of "minimal situation" does the work of getting the donkeys that are beaten to be the donkeys that are owned in (31). Think of a situation as being made up of individuals, relations and properties. A minimal situation can be informally described as one which is made up of only those individuals, relations and properties necessary to make some proposition true. (See Berman (1987), Schein (1993), Elbourne (2005) and especially Kratzer (1989, 1990, 2002, to appear).)

(35) A situation, s , is a minimal situation in which $P(s) = 1$ iff there is no $s' < s$ such that $P(s') = 1$.

Therefore, a situation that makes “a man, x , owns a donkey” true will be a minimal situation just in case it contains only that man and one donkey and the ‘own’ relation between them. A situation that makes “ x beats the donkey” true will be a minimal situation just in case it contains only x and the donkey and the ‘beats’ relation between them. If the ‘owns’ situation is a part of the ‘beats’ situation, then, because they are each allowed only one donkey, the donkey in both situations will be the same.

This treatment of (31) extends to cases like (36).⁹

(36) Every man who owns a donkey beats it.

The *it* in (36) is anaphoric to *a donkey* in the very same way that *the donkey* is in (31). Elbourne (2005) argues that this is because *it* is, in fact, *the donkey* with the NP containing *donkey* elided. His proposal, following Postal (1969), is that pronouns are how definite determiners are pronounced when the NP they are in construction with is elided. The transformations in (37) are all on a par.

- (37) a. She saw some books and he read some books. → She saw some books and he read some Δ .
 b. She wrote no books and he read no books. → She wrote no books and he read none Δ .
 c. She wrote the book and he read the book → She wrote the book and he read it Δ .

Thus, (36) is actually (38), where *it* has the meaning of *the*, and the semantics has the same consequences for (38) that it does for (31).

(38) Every man who owns a donkey beats [_{DP} *it* [_{NP} ~~donkey~~]].

The work done by minimal situations in guaranteeing that *the donkey* in (31), or *it* in (36), are anaphoric to the descriptive content of the preceding quantified expression mimics the work done by indices in Fox’s Trace Conversion rule. In translating Fox’s system into an event based semantics, I propose that we dispense with the indices in his rule and exploit the minimal situation technique. Because Elbourne’s system is built on quantificational expressions binding indexed variables, I will have to change his denotation for \forall as well. I propose changing it to (39).

(39) $\llbracket \forall \rrbracket = \lambda f_{\langle e, \langle s, t \rangle \rangle} . \lambda g_{\langle s, t \rangle} . \lambda s . \text{for every minimal } s' \text{ such that } s' \leq s \text{ and } \exists x f(x)(s') = 1, \text{ there is a minimal } s'' \text{ such that } s' \leq s'' \leq s \text{ and } g(s'') = 1.$

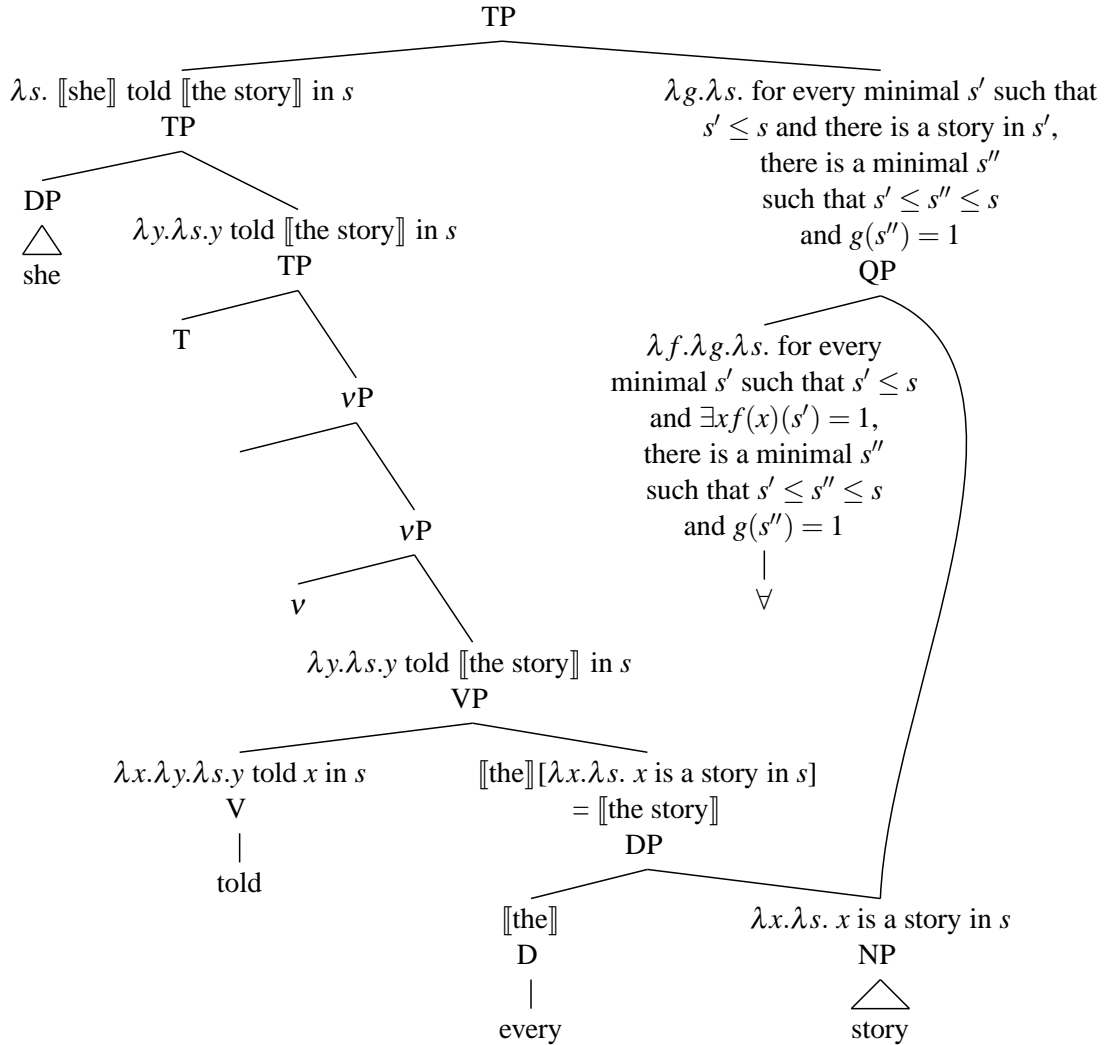
This assumes that NPs are functions from individuals to predicates of situations (or events).

(40) $\llbracket \text{story} \rrbracket = \lambda x . \lambda s . x \text{ is a story in } s.$

⁹ See Geach (1962), Evans (1977), Cooper (1979), Heim (1990).

Not only will this proposal dispense with the indices in Fox’s Trace Conversion rule, it will dispense with Fox’s Trace Conversion rule entirely. Here’s an illustration.¹⁰

- (41) $\lambda s.$ for every minimal s' such that $s' \leq s$ and s' is a story ,
 there is a minimal s'' such that $s' \leq s'' \leq s$ and $\llbracket \text{she} \rrbracket$ told $\llbracket \text{the story} \rrbracket$ in s''



My proposal, then, is that lower copies are plain definite descriptions — or the pronoun version of them — which share an NP with a higher quantificational expression. The connection between the higher quantifier and the lower definite description comes by way of quantifying over situations.

¹⁰ My proposal has certain features in common with the “choice function” version of the Trace Conversion rule that Sauerland (2004) argues for. On this view, the definite determiner in the lower copy is a variable over choice functions that is quantified over by the higher copy. As he shows in Sauerland (1998), this approach gives an interesting explanation of certain crossover phenomena. My proposal does not obviously extend to these cases.

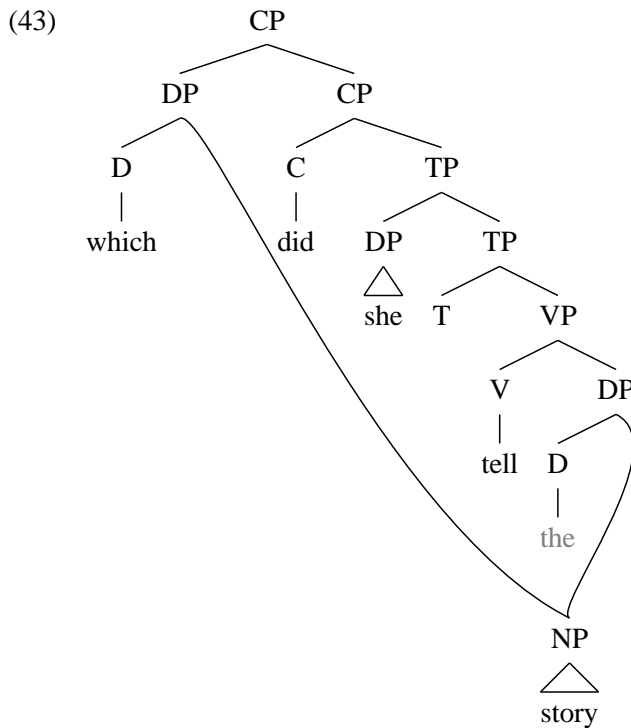
Under this proposal, then, “traces” of QR are kinds of donkey pronouns.¹¹ They are entirely parallel to the pronoun in (38), but whereas the pronoun in (38) is missing its NP by way of deletion, traces share their NPs with a higher quantificational term. This achieves Chomsky (1993)’s goal of reducing the movement relation entirely to structure building; it does so in a way that is close in spirit to Starke (2001). It raises a raft of questions, of course, including how to model the familiar island conditions characteristic of movement, as well as how to distinguish pronominal binding, donkey anaphora, and traces.

4 An open question

The account given in section 2 for why only one copy is pronounced is not complete. In the cases of quantifier raising that I have concentrated on, there are two reasons the higher copy is not pronounced. The first is addressed in section 2: the NP part cannot be pronounced in both of the positions it occupies, and something independent of our story determines that it will be pronounced in the lower position. The second is that the quantifier which the NP merges with is silent.

In cases of movement where the higher copy is pronounced we find the same conspiracy producing a silent copy in the lower position. A case of *wh*-movement like (42), for example, gets a representation like (43) under the proposals here.

(42) Which story did she tell?



¹¹ Compare Boeckx (2003), who attempts to reduce donkey anaphora to movement.

The lower copy of the *wh*-phrase is not pronounced in (43) for the following two reasons. First: the shared NP can be pronounced in only one of its positions, and something independent of our story determines in this case that it will be the higher position. Second: the determiner in this example is silent. It does not seem accidental that the position in which the NP is not pronounced is always the position in which the determiner happens to be silent. But my proposal does not connect these two facts.

This is a problem. But I am encouraged by the existence of cases that are just what would be expected if the determiner were pronounced in cases like (43). If Elbourne’s analysis of pronouns as determiners is correct, we should expect a determiner that is in construction with a silent NP to have the form of a pronoun. Therefore if (43) were to arise with an overt determiner, it should look like a resumptive pronoun but with the reconstruction effects characteristic of movement. As Elbourne (2005, section 3.5.3) notes, this is just what we find. Aoun et al. (2001) report such cases for Lebanese Arabic. An illustrative example from their paper is (44).

- (44) təlmiiz-a₁ lkəsleen ma baddna nɣabbi [wala mɣallme]₁ ʔanno huwwe
 student-her₁ the-bad NEG want.1P tell.1P [no teacher]₁ that he
 zaɣbar b-l-fahṣ
 cheated.3SM in-the-exam
 ‘her bad student, we don’t want to tell any teacher that he cheated on the exam.’
 (Aoun et al. 2001, (25b): 381)

The phrase ‘tə lmiiz-a₁ lkəsleen’ (*her bad student*) contains a pronoun that is bound to a lower quantifier (‘wala mɣallme’ (*no teacher*)). This is made possible by the phrase ‘tə lmiiz-a₁ lkəsleen’ (*her bad student*) being related to the resumptive pronoun ‘huwwe’ (*he*) through movement.

5 Conclusion

We have looked at a narrow range of cases, but if the conclusions reached here can be extended to all examples of movement, then we have the following results.

- (45) Results
- There is only one determiner, pronounced many ways, and it is *the*.
 - Indices are not part of what relates a moved phrase with its “trace.”
 - (Phrasal) Movement arises when one term has more than one position in a phrase marker, and nothing more.

References

Adger, David, and Gillian Ramchand. 2005. Merge and move: *Wh*-dependencies revisited. *Linguistic Inquiry* 36:161–193.

- Aoun, Joseph, Lina Choueiri, and Norbert Hornstein. 2001. Resumption, movement, and derivational economy. *Linguistic Inquiry* 32:371–403.
- Baltin, Mark. 1987. Do antecedent-contained deletions exist. *Linguistic Inquiry* 18:579–596.
- Barss, Andrew. 1986. Chains and anaphoric dependence: On reconstruction and its implications. Doctoral Dissertation, Massachusetts Institute of Technology.
- Barwise, John, and Robin Cooper. 1981. Generalized quantifiers and natural language. *Linguistics and Philosophy* 4:159–219.
- Beghelli, Filippo. 1993. A minimalist approach to quantifier scope. In *Proceedings of the North East Linguistic Society 23*, ed. Amy J. Schafer, 65–80. University of Ottawa: Graduate Linguistic Student Association.
- Beghelli, Filippo. 1995. The phrase structure of quantifier scope. Doctoral Dissertation, UCLA, Los Angeles.
- Berman, Stephen. 1987. Situation-based semantics for adverbs of quantification. In *University of Massachusetts occasional papers vol. 12*, ed. Jim Blevins and Ann Vainikka, 8–23. University of Massachusetts at Amherst.
- Boeckx, Cedric. 2003. (in)direct binding. *Syntax* 6:213–236.
- Butler, Jonny. 2004. Phase structure, phrase structure, and quantification. Doctoral Dissertation, The University of York.
- Chomsky, Noam. 1993. A minimalist program for linguistic theory. In *The view from building 20*, ed. Ken Hale and Jay Keyser, 1–52. Cambridge, Massachusetts: MIT Press.
- Chomsky, Noam. 1995. Bare phrase structure. In *Government binding theory and the minimalist program*, ed. Gert Webelhuth, 383–439. Oxford: Oxford University Press.
- Citko, Barbara. 2005. On the nature of merge: External merge, internal merge, and parallel merge. *Linguistic Inquiry* 36:475–496.
- Cooper, Robin. 1979. The interpretation of pronouns. In *Syntax and Semantics 10: Selections from the Third Groningen Round Table*, ed. Frank Heny and H. Schnelle, 61–92. New York: Academic Press.
- Davidson, Donald. 1967. The logical form of action sentences. In *The logic of decision and action*, ed. Nicholas Rescher, 81–95. Pittsburgh: Pittsburgh University Press.
- Elbourne, Paul D. 2005. *Situations and individuals*. MIT Press.
- Evans, Gareth. 1977. Pronouns, quantifiers, and relative clauses. *Canadian Journal of Philosophy* 7:467–536.
- Fiengo, Robert, and Robert May. 1994. *Indices and identity*. Cambridge, Massachusetts: MIT Press.
- Fitzpatrick, Justin, and Erich Groat. 2005. The timing of syntactic operations: Phases, c-command, remerger, and Lebeaux effects. Paper presented at ECO5, March 2005.
- Fox, Danny. 1999. Reconstruction, binding theory, and the interpretation of chains. *Linguistic Inquiry* 30:157–196.
- Fox, Danny. 2002. Antecedent-contained deletion and the copy theory of movement. *Linguistic Inquiry* 33:63–96.

- Fox, Danny. 2003. On logical form. In *Minimalist syntax*, ed. Randall Hendrick, 82–123. Oxford: Blackwell Publishers.
- Fox, Danny, and Jon Nissenbaum. 1999. Extraposition and scope: a case for overt QR. In *Proceedings of the West Coast Conference on Formal Linguistics 18*, ed. Sonya Bird, Andrew Carnie, Jason D. Haugen, and Peter Norquest, 132–144. Somerville, Massachusetts: Cascadilla Press.
- Frampton, John. 2004. Copies, traces, occurrences, and all that: Evidence from Bulgarian multiple *wh*-phenomena. Unpublished manuscript, Northwestern University.
- Freidin, Robert. 1986. Fundamental issues in the theory of binding. In *Studies in the acquisition of anaphora*, ed. Barbara Lust, volume 1, 151–188. Dordrecht: Reidel.
- Geach, Peter. 1962. *Reference and generality*. Ithaca, NY: Cornell University Press.
- Giannakidou, Anastasia, and Jason Merchant. 2002. Modularity in the Minimalist Program. Paper presented at the Maryland Mayfest, May 2002.
- Hallman, Peter. 2000. The structure of predicates: Interactions of derivation, case and quantification. Doctoral Dissertation, University of California, Los Angeles.
- Harley, Heidi. 1995. Subjects, events and licensing. Doctoral Dissertation, Massachusetts Institute of Technology.
- Heim, Irene. 1990. E-type pronouns and donkey anaphora. *Linguistics and Philosophy* 13:137–178.
- Heim, Irene, and Angelika Kratzer. 1998. *Semantics in generative grammar*. Malden, MA: Blackwell.
- Higginbotham, James. 1983. The logic of perceptual reports: An extensional alternative to situation semantics. *The Journal of Philosophy* 80:100–127.
- Kratzer, Angelika. 1989. An investigation of the lumps of thought. *Linguistics and Philosophy* 12:607–653.
- Kratzer, Angelika. 1990. Uniqueness. *Linguistics and Philosophy* 13:273–324.
- Kratzer, Angelika. 1996. Severing the external argument from its verb. In *Phrase structure and the lexicon*, ed. Johan Rooryck and Laurie Zaring, 109–137. Dordrecht, The Netherlands: Kluwer Academic Publishers.
- Kratzer, Angelika. 2002. Facts: Particulars or information units? *Linguistics and Philosophy* 25:655–670.
- Kratzer, Angelika. 2005. Indefinites and the operators they depend on: From Japanese to Salish. In *Reference and quantification: The Partee effect*, ed. Gregory N. Carlson and Francis Jeffrey Pelletier, 113–142. CSLI Publications.
- Kratzer, Angelika. to appear. Situations in natural language semantics. In *The Stanford encyclopedia of philosophy*.
- Lebeaux, David. 1988. Language acquisition and the form of the grammar. Doctoral Dissertation, University of Massachusetts, Amherst.
- Matthewson, Lisa. 2001. Quantification and the nature of crosslinguistic variation. *Natural Language Semantics* 9:145–189.

- Nunes, Jairo. 1995. The copy theory of movement and linearization of chains in the Minimalist Program. Doctoral Dissertation, University of Maryland.
- Nunes, Jairo. 1996. On why traces cannot be phonetically realized. In *Proceedings of North East Linguistic Society*, ed. Kiyomi Kusumoto, 211–226. Harvard University and MIT: Graduate Linguistic Student Association.
- Nunes, Jairo. 1999. Linearization of chains and phonetic realization of chain links. In *Working minimalism*, ed. Samuel Epstein and Norbert Hornstein, 217–249. Cambridge, Massachusetts: MIT Press.
- Nunes, Jairo. 2001. Sideward movement. *Linguistic Inquiry* 32:303–344.
- Parsons, Terence. 1990. Events in the semantics of English: A study in subatomic semantics. In *Current studies in linguistics series no. 19*, 334. Cambridge, Massachusetts: MIT Press.
- Postal, Paul M. 1969. On so-called ‘pronouns’ in English. In *Modern studies in English*, ed. D. Reibel and Sanford Schane, 201–244. Englewood Cliffs, New Jersey: Prentice-Hall.
- Rothstein, Susan. 2004. *Structuring events*. Blackwell Publishing.
- Sauerland, Uli. 1998. The meaning of chains. Doctoral Dissertation, Massachusetts Institute of Technology, Cambridge, Massachusetts.
- Sauerland, Uli. 2004. The interpretation of traces. *Natural Language Semantics* 12:63–127.
- Schein, Barry. 1993. *Plurals and events*. Cambridge, Massachusetts: MIT Press.
- Sportiche, Dominique. 2003. Reconstruction, binding and scope. Unpublished manuscript, University of California, Los Angeles.
- Starke, Michal. 2001. Move dissolves into merge: A theory of locality. Doctoral Dissertation, University of Geneva.
- Szabolcsi, Anna. 1997. *Ways of scope taking*. Dordrecht ; Boston ; London: Kluwer Academic Publishers.
- Takahashi, Shoichi. 2006. Decompositionality and identity. Doctoral Dissertation, Massachusetts Institute of Technology.
- Tiedeman, Robyne. 1995. Some remarks on antecedent contained deletion. In *Minimalism and Linguistic Theory*, ed. Shosuke Haraguchi and Michio Funaki, 67–103. Tokyo: Hituzi Syobo.
- Williams, Edwin. 1986. A reassignment of the functions of LF. *Linguistic Inquiry* 17:264–300.
- Williams, Edwin. 1988. Is LF distinct from S-structure? a reply to May. *Linguistic Inquiry* 19:135–146.