

How Far Will Quantifiers Go?*

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A method now popular for fixing the scopes of arguments involves a covert movement operation, named QR (for Quantifier Rule) by Robert May. May envisioned QR as a kind of adjunction operation, attaching the arguments so affected to phrases dominating that argument. From the surface representation in (1a), for instance, QR can fashion the representations in (1b) and (1c) by adjoining the object and/or subject argument to IP.

- (1) a. [_{IP} Someone [_{VP} loves everyone]].
b. [_{IP} everyone₁ [_{IP} someone [_{VP} loves *t*₁]]].
c. [_{IP} someone₂ [_{IP} everyone₁ [_{IP} *t*₂ [_{VP} loves *t*₁]]]]

As the representations in (1a,b) suggest, QR has syntactic consequences rather like those displayed by Topicalization, the process that derives (2b) from (2a).

- (2) a. [_{IP} Someone [_{VP} loves Mary]].
b. [_{IP} Mary₁, [_{IP} someone [_{VP} loves *t*₁]]]

Setting aside the question whether in both cases the moved item adjoins to IP, it is clear that in neither (1a,b) nor (2b) is the moved item assuming a new grammatical function. In the language of *Lectures on Government and Binding*, the terms moved in (1) and (2) are relocating to non-argument positions. A common conception of the typology of movement operations has it that movement to non-argument positions obeys a single cluster of locality conditions, typically those lumped together under Chomsky's Subadjacency. As a consequence, one expectation raised by the thesis that the scope of quantifiers is determined through QR is that this cluster of locality conditions should be reflected in the size of quantifiers' scopes. Indeed, this is one of the more straightforwardly empirical means of confirming the QR thesis.

So it is interesting that it does not meet with unqualified success. For while it is true that quantifiers may not assume a scope that reaches out of some of the islands that Topicalized phrases are trapped in, this is not always the case. The scope of quantifiers is, as expected, unable to extend out of a complex noun phrase, an indirect question or an adverbial clause, as (3a)-(5a) indicate; and as (3b)-(5b) show, this matches the behavior of Topicalization.

- (3) a. Someone met the child that talked to everyone.
b. *It's Mary₁ that someone met the child that talked to *t*₁.
- (4) a. Someone wondered whether I talked to everyone.
b. *It's Mary₁ that someone wondered whether I talked to *t*₁.
- (5) a. Someone left the meeting before I talked to everyone.
b. ?*It's Mary₁ that someone left the meeting before I talked to *t*₁.

(I use the cleft construction in (3)-(5) to represent the locality condition holding of Topicalized phrases because of the difficulty in forming judgements about sentences created by

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Topicalization when they have been stripped from their licensing discourses. Clefts are the closest thing to a discourse independent Topicalization, and because the locality conditions on Topicalizations and Clefts are identical, they lend themselves to our purposes.) But Topicalized phrases are able to escape from finite declaratives with greater ease than can quantifiers. Thus, (6a) is perfectly acceptable, but (6b) does not let the embedded object gain scope over the root object.

- (6) a. It's Mary₁ that I told someone you would visit t_j .
- b. I told someone you would visit everyone.

It is not that the scopes of quantifiers are necessarily clause bound; the embedded quantifier in (7), for example, is able to have the root quantifier in its scope.

- (7) Someone wanted to visit everyone.

Rather, it seems that finite clauses, generally, act as islands for quantifiers. In this respect, then, the scope of quantifiers is subject to a tighter locality constraint than is Topicalization.¹

There are also cases where a quantifier's scope seems able to reach out of environments where Topicalization cannot. In (8a), for example, the universal quantifier escapes the subject it is embedded within, as its ability to bind the pronoun indicates.

- (8) a. A resident of every California city curses its traffic.
- b. *It's Sacramento that a resident of t curses its traffic.

But Topicalization, like other forms of \bar{A} Movement, is unable to escape subjects in this way, as (8b) indicates. In these contexts, then, the scope of quantifiers seems to be freer than the locality conditions on Topicalization would allow.

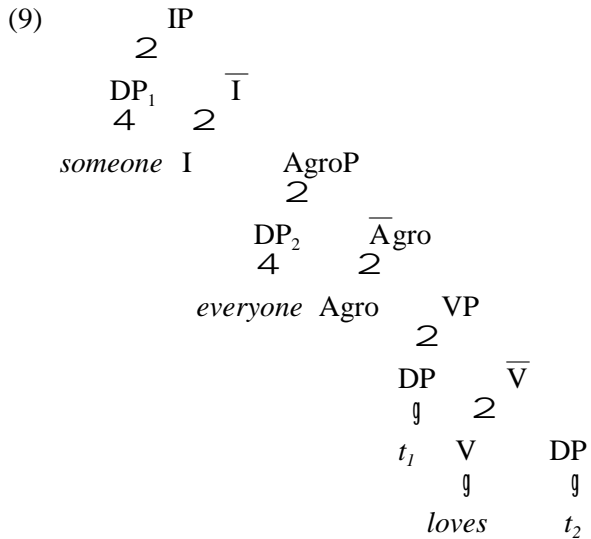
If we hold constant the thesis that \bar{A} Movement coheres as a class with respect to locality constraints, these facts push us towards one of only a handful of conclusions. We might exploit the fact that QR is covert Movement, and Topicalization overt Movement, and seek a difference in the way these two methods of Movement interact with locality conditions. Or we might abandon a treatment of quantifier scope that involves Movement, and seek an alternative from which the locality conditions emerge. Or, more conservatively, we might abandon the view that QR is a member of the \bar{A} Movement family, and find another class of Movement operations to include it in.

This last strategy is one that Hisatsugu Kitahara and Norbert Hornstein have championed in recent years, and it promises to offer a solution to the contrast in (6). Their proposals are spurred by the pressure Chomsky's recent writings have brought to bear on Movement operations. Chomsky entertains the thesis that all Movement operations are licensed by feature checking of the sort that is typical of \bar{A} Movement. Kitahara and Hornstein seek a method for assimilating QR to \bar{A} movement, and argue moreover that there are empirical advantages to doing so. One is simply that it might take us closer to locating the locality condition on QR. I will suggest in the

following section that this proposal be expressed in somewhat different terms; I'll propose that we equate QR with Scrambling, much as Diesing (1992), Beck (1996) and many others have done, instead of with A Movement proper. And then in section 2 I will explore the consequences this treatment has for the case in (8a).

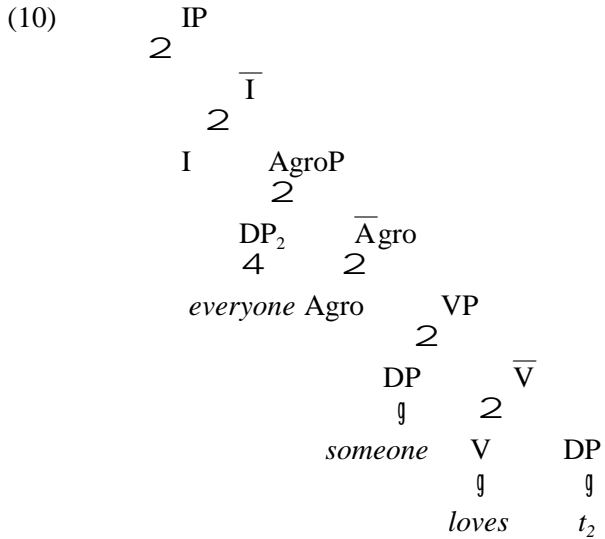
1. What Kind of Movement is QR?

My discussion is based on Hornstein (1995), which has the more complete examination of the proposal. Hornstein argues that QR should be considered an instance of A Movement. More particularly, he suggests that the method by which an object quantifier gains wider scope than a local subject, as in (1b), arises through a combination of the object's raising and the subject's lowering.² He adopts, first, Chomsky's (1991, p. 436) suggestion that structural Accusative Case is assigned to DPs that covertly move into AgrOP -- a functional projection located above VP but lower than the functional projections that hold finiteness information. This would give to (1a) the LF representation in (9).



(I ignore throughout the effects of verb movement, and the results of separating I° into its parts.) Note that in (9) I have adopted that version of the Derived Subject Hypothesis that places subjects underlyingly within VP; movement of the subject into its surface Case-marked position leaves the trace shown in Specifier of VP. Hornstein relies on this feature of the Derived Subjects Hypothesis to allow for the subject quantifier to "lower" back into its underlying position. This would produce, finally, the LF in (10), which matches the result of QR in (1b).

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That subjects may lower back into the position from which they get their θ -role is known from the ambiguity of cases like (11), and has been put to use in cases parallel to (10) by Diesing (1992) and Kratzer (1995).

(11) A boy seems to be here.

As May (1985, p. 97ff) shows, the reading of (11) in which *a boy* is construed as part of the clausal complement to *seem* (its most natural interpretation) arises by putting *a boy* back into that embedded clause.³

The wide-scope reading of objects, then, comes about from two sorts of A Movements: one up – Raising, let’s call it – and one down – Lowering. The range of situations where objects may have wider scope than local subjects should therefore be defined by the conditions that allow each of these operations to interact in the way (10) diagrams. This means that we should see the effects of constraints on both Lowering and Raising; objects should not be able to gain scope over subjects if either Lowering doesn’t allow the subject to move far enough down, or Raising doesn’t allow the object to move far enough up.

Hornstein suggests that this mixture of constraints is what yields the locality conditions we have witnessed above. Subjects never Lower to a position below the one from which they get their θ -role, so subjects will not be able to lower into embedded clauses unless they have raised from those clauses. As a consequence, quantifiers in embedded clauses will only be able to gain wider scope than terms in higher clauses if they are able to Raise into those clauses. If Raising is A Movement of the sort that Hornstein envisages, then this will not be possible of objects quite generally. Hence, objects embedded within complement clauses should not be able to scope out of those clauses, whether or not those embedded clauses are islands for $\bar{\text{A}}$ movement. In this way, the puzzling islandhood of finite declarative clauses is explained. This leaves the ability of an object quantifier to scope out of the embedded non-finite clause in (7) mysterious, however.

For this Hornstein suggests that a process of Restructuring, like that which is found in Romance between *want* and its infinitival complement, applies. This process, presumably, allows the object of the infinitival clause embedded under *want* to A move into the higher clause.

A kind of minimal pair that Hornstein discusses, and which, like the contrast between (6b) and (7), involves a difference in finite and non-finite clauses, is (12).

- (12) a. Somebody believes that everyone is kind.
b. Somebody believes everyone to be kind.

In (12b), but not (12a), the universal quantifier is able to scope over the indefinite. Hornstein's proposal relates this to the fact that the subject of the embedded clause in (12b) is related to a Case-marked position in the higher clause. This means that this subject has Raised into the Specifier of AgroP of the higher clause, bringing it within reach of the indefinite. In (12a), by contrast, the subject receives Case from the embedded clause and therefore does not Raise into range of the higher indefinite. The different scope possibilities of the embedded subjects in (12a) and (12b) are connected to the ways in which they get their Case, and this is just as Hornstein's proposal would have it.

These facts, then, speak on behalf of the Raising component to Hornstein's scheme. We should now look for evidence of the Lowering component: are there reasons for thinking that subject Lowering is a necessary component to giving it narrower scope than a local object? Hornstein provides a series of arguments on behalf of this thesis as well, but his arguments are built on judgements that I have not been able to reproduce.⁴ Nonetheless, I think there are phenomena that speak on behalf of this conjecture. But to see this, we must first confront a problem that arises with Hornstein's particular execution of his idea.

As (9) indicates, the position into which objects move on Hornstein's account is the first available Specifier position above VP. As a consequence, objects should have narrower scope than almost everything else in the sentence that is not within VP. In particular, objects should have scope narrower than sentence negation, which, since Pollock (1989), is thought to reside between the functional head holding tense information and the functional head mediating subject agreement. This, however, is not always true; for example, (13) is ambiguous.

- (13) Gary didn't answer many of the questions on the exam.

This sentence can report that the number of questions Gary didn't answer is great (*many of the questions* has scope wider than *not*) as well as deny that Gary answered many questions (*many of the questions* has scope narrower than *not*). If objects can have scope no higher than the position given in (9), then only the second of these readings should be available.

One solution to this problem which would preserve the hypothesis that (9) correctly shows how far objects may Raise, would be to exploit the fact that the object in (13) is an indefinite. It is known that indefinites are frequently able to gain wider scopes than otherwise available to quantifiers (see Abusch (1993-4) for one such case). Some authors have attempted to explain this

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by adopting a treatment of indefinites in which their quantificational part is quite separate from their lexical part, much along the lines of the suggestions in Lewis, Heim and Kamp. Kratzer (forthcoming) (and see also Reinhart (1997)), for instance, suggests that indefinites introduce a variable over choice functions, which is caught by an invisible, higher, existential quantifier. Sato-Zhu (1996) suggests that all such cases of wide-scope readings of indefinites come about in this way.

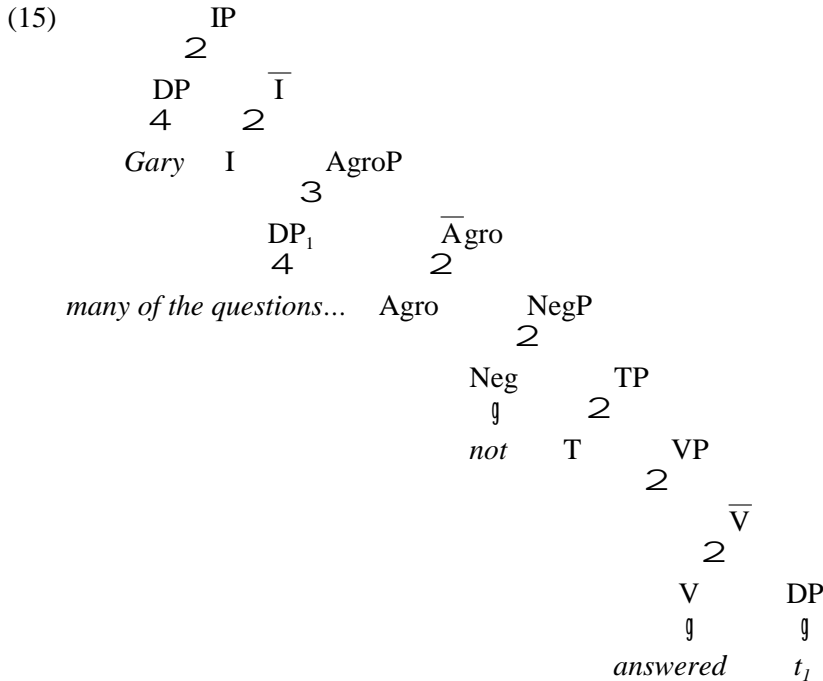
But this solution will not be general enough. Judgements become trickier, but there are examples similar to (13) which nonetheless don't involve indefinites and are therefore not susceptible to this kind of analysis. Consider, for examples, (14).

- (14) a. I haven't read almost everything.
- b. I can believe every one of Will's claims.

On its object wide-scope interpretation, (14a) asserts that there is almost nothing which I have read. On its object narrow-scope interpretation, it denies that I have read almost everything. That these interpretations are distinct can be seen by considering the situation in which I have read everything. In that (remarkable) situation, (14a) is false on the first (object wide-scope) interpretation, but true under the second (object narrow-scope) interpretation. In (14a), then, it must be possible to scope the object beyond *not*.

In (14b) is a similar ambiguity, involving the modal *can* instead of negation. When the object has wider scope than *can*, (14b) asserts that for every one of Will's claims, there is a possibility of my believing it. When the object has narrower scope than *can*, (14b) reports that there is a possibility that I will find all of Will's claims believable. These, of course, are distinct interpretations. It could be, for instance, that I find each of Will's claims individually plausible, but know that together they are inconsistent. Inconsistency is a belief buster for me, so in this situation (14b) will be true on its object wide-scope interpretation, but not its object narrow-scope interpretation. This ambiguity indicates that *every one of Will's claims* is capable of scoping beyond *can*.

In both cases in (14), then, we see that it is not just indefinites which are able to gain a wider scope than indicated in (9). It therefore seems necessary to let QR bring objects past the position *not* and modals have. We could incorporate this fact into Hornstein's framework by placing the Specifier of Object Agreement higher than negation, as in (15).



Then, as this representation indicates, it would be possible for objects to gain wider scope than negation by way of their movement into Specifier of AgroP. And if T° is the position in which modals are interpreted (perhaps because this is where they are base-generated), then this will also give objects wider scope than modals. Movement to Specifier of Object Agreement must, however, now be seen as optional, or subject to Lowering, if the narrower scope reading is to be achieved.

There are other ways of wrapping Hornstein's suggestions around this fact, but for my purposes this method can act as proxy for the others. We are now ready to consider the Lowering component to scope assignment.⁵ Consider (16), where the subject of (13) has been replaced by an existential quantifier.

(16) Some student or other has answered many of the questions on the exam.

This sentence allows *many of the questions* to have scope wider than *some student*; on this interpretation it says that many of the questions on the exam got answered (perhaps by different students). If Hornstein is correct, this reading requires *some student* to Lower. A useful fact about *some student* is that it cannot remain within the scope of negation when it is in the same clause as that negation. In (17), for instance, *some student* must have scope wider than *not*.

(17) I have not met some student.

(This sentence cannot report that I haven't met anybody.) Now, this property of *some* should prevent *some student* from Lowering in (18).

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(18) Some student or other hasn't answered many of the questions on the exam.

And indeed, it cannot be within the scope of *not*. But further, if (my modification of) Hornstein is correct, this should also mean that *many of the questions* cannot have scope wider than *some student* in (18). So this sentence should not be able to report that many of the exam questions didn't get answered (by different students). And so far as I have been able to detect, this is correct. This is not what would be expected if object quantifiers were able to QR to a position higher than the surface position of the subject, as, say, in May's original proposal. We have seen from (13) and (16) that *many of the questions* is able to scope over negation and the subject quantifier independently; so a classical May-like interpretation of QR should allow for their combination. Requiring subject Lowering, however, will explain the failure of their combining in (18).

So there is evidence for both parts of Hornstein's proposal: subject Lowering is a necessary ingredient to the scope ambiguities under consideration, and object Raising better mimics \bar{A} Movement than it does \bar{A} Movement.

But there are problems too.

1.1. Adjuncts can QR

What makes \bar{A} movement different from \bar{A} movement is not understood, but a useful generalization about \bar{A} movement is that it is typically done in order to give arguments a "grammatical function." In Indo-European, this usually means that arguments are brought into positions where their associated Case or agreement morphology is triggered. One might therefore extend the scenario we have just reviewed for direct objects to indirect objects without departing centrally from the proposal under consideration. In (19), for example, we could imagine that the indirect object \bar{A} moves into a phantom functional projection that licenses indirect objects.⁶

(19) A different student talked to every visitor.

This will put it into a position under which the subject can Lower, and the availability of an object wide-scope reading is accounted for.

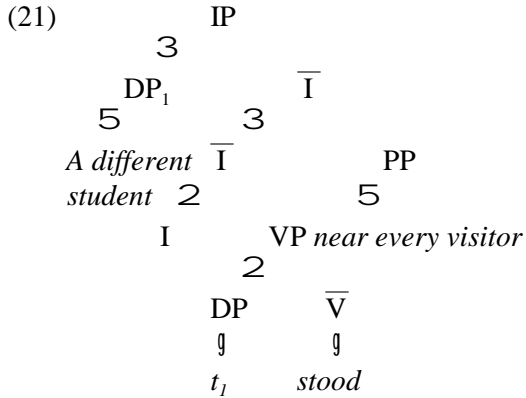
However, importing a similar sort of story for cases where adjuncts are involved, as in (20), would be a departure from the central proposal.

(20) A different student stood near every visitor.
(can mean: for every visitor, some (possibly different) student stood near him or her.)

Unless we abandon the hypothesis that grammatical functions are only assumed by arguments (or widen our criteria for argumenthood), there is no sense in which *every visitor* can gain wider scope than the subject by \bar{A} moving past it.

In order for the thesis to be preserved, it is necessary to find another way for the subject to Lower into the adjunct's scope. Hornstein suggests that this can be achieved by letting adjuncts

be base-generated in a position higher than that which subjects Lower to. In (20), for example, *near every visitor*, might be positioned as in (21).



When *A different student* lowers in (21), it will fall within the scope of *near every visitor*; and this representation could well represent the wider scope reading for *every visitor*, if the PP headed by *near* can be construed as a quantifier of the right sort.

A feature of this approach is that the scope an adjunct has will correspond to the position which determines what it modifies. So in (21), for instance, *near every visitor* takes $\bar{\text{I}}$ as its scope, and also modifies $\bar{\text{I}}$. On Hornstein's account, then, adjuncts should not be able to assume a scope position that differs from the position at which their meaning is composed with the meaning of the rest of the sentence. This ability is reserved to arguments.

However, examples such as (22) show that this is incorrect.⁷

(22) A different student tried to stand near every visitor.

In (22), *near every visitor* modifies the embedded clause, and not the root clause -- that is, this sentence is not synonymous with *a different student tried near every visitor to stand*. And yet, *near every visitor* may have *a different student* in its scope. The correspondence expected on Hornstein's proposal between scope and modification breaks down.

It may appear that we can avoid the conclusion I have just drawn from (22) by denying that there are two predicates in this example. There is some cause to suspect this. In German and Dutch, an infinitival clause following *try* collapses in a way that is sometimes analyzed as invoking complex predicate formation (rather like the Restructuring process entertained in connection with (7)).⁸ If English hosts a similar process, we might imagine that *tried to stand* in (22) forms a single predicate which *near every visitor* modifies. The difference between taking *near every visitor* to modify *stand* and taking it to modify *tried to stand* will be so slight that I doubt mere reflection on the meaning of (22) will allow us to choose. So it's possible that I am mistaken in taking *near every visitor* to modify *stand* in (22); if so, (22) could very conceivably allow us to preserve the correspondence between scope and modification which Hornstein's

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proposal requires. A complex predicate analysis would give (22) a monoclausal representation entirely parallel to (20).

But this evasion does not seem probable, given the interpretation that (23) allows.

(23) A different boy tried to stand near every visitor only after a different girl had tried to Δ .

The elided VP in this example can be *stand near every visitor*. So far as I know, there are no grammatical instances of VP Ellipsis removing part of a predicate,⁹ so in (23) we can be pretty certain that there is no complex predicate in the second conjunct made up of *tried to stand*. Nonetheless, *near every visitor* can modify *stand* in the second conjunct and still have scope over *a different girl*. So these examples do seem to pose a genuine counter-example to Hornstein's solution. Adjuncts may have a scope that differs from what they modify.

What we learn from these cases, then, is that adjuncts must be able to QR. But, as noted at the outset of this section, this is a QR that cannot be construed as A Movement. The Raising component of Hornstein's scheme for fixing scope interactions therefore should not be thought of as necessarily involving A Movement.

1.2. The Non-Clause Bound Cases

As noted above, A Movement does not typically move the complements of verbs into a higher clause. It's this feature of A Movement which Hornstein's account relies on to capture the fact that *every book* does not have *a different student* in its scope in (24).

(24) A different student said that I had read every book.

But, as we have seen, there are situations where a quantificational complement is able to gain scope outside the clause it originates in. Hornstein suggests that Restructuring is responsible for these cases. He recommends that we understand cases like (25) to involve a process which allows the object of *read* to move into a Case-marked position in the higher clause.

(25) A different student wanted to read every book.

There is reason for thinking that Restructuring is not responsible for this, however. Kennedy (1997) notes that the range of verb+infinitival constructions which allow for the wide-scope reading of the object is considerably broader than it is in the Restructuring contexts of Romance. Thus, while verbs such as *expect*, *hope* and *require* do not typically license Restructuring in Romance, they do permit the objects of their infinitival complements to gain widest scope.

- (26) a. At least one American tourist expects to visit every European country this year.
b. At least one American tourist hopes to visit every European country this year.
c. Some government official is required to attend every state dinner.

(Kennedy (1997): (46), (47) & (50))

Note also that Restructuring is possible across an infinitival complementizer in Italian, but the presence of a complementizer in (25) makes the wide scope interpretation of the embedded object unavailable.

(27) A different student wanted for you to read every book.

In (27), *a different student* does not vary as a function of the books; it cannot fall within the scope of *every book*. If Restructuring were responsible for the exceptional wide-scope of the object in (25), there is no reason to expect (27) to be different.

Restructuring is not what is responsible for the wide-scope interpretation of the object in (25). If Restructuring is the only process that allows A movement to bring objects into higher clauses, then QR is behaving in these contexts unlike A movement.

1.3. It's Scrambling

We have seen two difficulties with Hornstein's characterization of the Raising component of scope interactions. It differs from A Movement in being able to move adjuncts, and it differs from A Movement with respect to the contexts in which it is released from its otherwise clause-boundedness.

If Raising isn't A Movement, what is it? All of the attributes we have reviewed for QR can be found in the sort of movement operation which in German and Dutch goes under the name of "Scrambling." I suggest therefore that we collapse the Raising component of QR to Scrambling.

Like QR, Scrambling can move object arguments out of embedded clauses when those clauses are infinitives. And this is possible even outside of Restructuring contexts; see Besten and Rutten (1989). (I illustrate with Dutch examples.)

(28) ...dat Jan *Marie_j* heeft geprobeerd [*t_j* te kussen].
 ...that John Mary has tried to kiss
 (...that John has tried to kiss Mary.)

Like QR, this operation is blocked when the infinitival clause has a complementizer, as in (29).

(29) *...dat Jan *Marie_j* heeft geprobeerd [om *t_j* te kussen].
 ...that John Mary has tried C° to kiss
 (...that John has tried to kiss Mary.)

And, like QR, it is prevented when the embedded clause is not an infinitival, as in (30).

(30) *...dat Jan *boken_j* heeft besloten [dat er *t_j*
 ...that John books has decided that he
 gelezen heeft].
 read has
 (...that John has decided that he has read books.)

Finally, Scrambling is not restricted to arguments. Like QR, it can relocate adjuncts, as in (31).¹¹

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- (31) ...dat Jan naast Jamie heeft geprobeerd zijn soep to eten.
 ...that Jan near Jamie has tried his soup to eat
 (...that Jan has tried to eat his soup near Jamie.)

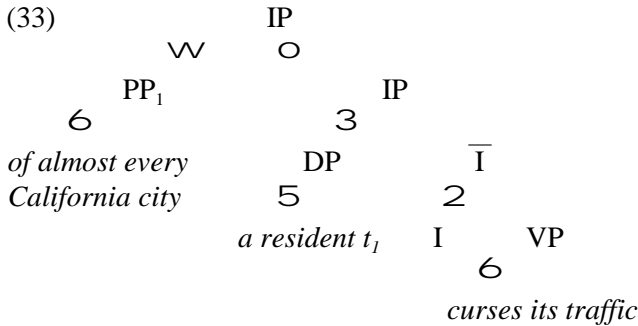
So Scrambling has all the characteristics we have identified in the Raising component of QR. When we know what kind of movement Scrambling is, we will know what QR is.

2. Inverse Linking

We are ready, now, to return to the example in (8a), repeated below, which poses yet another problem for Hornstein’s interpretation of the Raising component to his QR.

- (32) A resident of almost every California city curses its traffic.

In this example of so-called Inverse Linking, *almost every California city* has scope over *a resident*, and is able to bind *its*. This suggests an LF in which *of almost every California city* has moved out of the subject argument it is a part of; something like (33), perhaps.¹²



A similar situation arises in (34).

- (34) I recommended a representative from almost every department to its oversight committee.

Here too, an LF which places the Prepositional Phrase outside the argument it originates in is called for. Something like (35), perhaps.

- (35) I met [from almost every department]₁ [a representative t₁] to its oversight committee.

Now, as Kennedy (1997) notes, these are not representations which can be easily viewed as manufacturable by A Movement. But they are operations which fit into the Scrambling mold. German, for example, has cases rather like (33) and (35).

- (36) a. ...weil Hans über Ellipse ein neues Buch gekauft hat
...because Hans about ellipsis a new book bought has
(...because Hans has bought a new book about ellipsis.)
- b. ...weil über Ellipse ein neues Buch erschienen ist
...because about ellipsis a new book published is
(...because a new book about ellipsis is published.)
- c. ...weil aus Konstanz eine Fussballmannschaft da war
...because from Konstanz a soccer team there was
(...because there was a soccer team from Konstanz.)

The analogy between Scrambling and QR we have built in the previous section therefore recommends this process as the source for cases such as (32) and (34).

It is difficult to find grammatical instances of this phenomenon which are precisely parallel to (32); it is, in particular, hard to find cases where a PP has scrambled out of the subject of a transitive verb in German. Müller (1993, chapter 3) claims that this is generally blocked, and offers (37) by way of illustration.

- (37) a. *...daß darüber ein Buch den Fritz beeindruckt hat
...that about-that a book the Fritz impressed has
(...that a book about that has impressed Fritz.)
- b. *...daß darüber den Fritz ein Buch beeindruckt hat.
(Müller (1993); (54): 135-6)

With some grilling, however, I have managed to squeeze from speakers approval of examples such as:¹³

- (38) ...weil aus Konstanz gestern ein Student ein Papier über Bindung vorgetragen hat.
...because from Konstanz yesterday a student a paper about binding presented has
(...because yesterday a student from Konstanz has presented a paper.)

But, apparently, there are severe restrictions on Scrambling from the subjects of transitive verbs; restrictions that are relaxed for subjects of intransitives (as in (36b,c)) and direct objects (as in (36a)). So if the analogy I am offering between QR and Scrambling is to be maintained, we must come to understand why this dislike for Scrambling from transitive subjects is not shared by QR. Let's precede as though this understanding was at hand.

I am not equipped to make a thorough comparison of QR from argument DPs and Scrambling from argument DPs, but there is at least one attribute they share. Müller shows that Scrambling from DPs is subject to a condition that prevents it from affecting DPs with a genitive: the grammatical examples in (36) contrast with (39).¹⁴

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- (39) *...daß ich über Benjamin gestern Antjes Buch gelesen habe.
...that I about Benjamin yesterday Antje's book read have
(...that I have read Antje's book about Benjamin yesterday.)
(Müller (1993); (58a): 136)

There is a parallel constraint on QR. Grammatical examples of Inverse Linking, such as (32) and (34), contrast with (40).

- (40) a. My report about almost every California city curses its traffic.
b. I recommended my report about almost every department to its oversight committee.

In (40), *its* cannot be bound by the (almost) universal quantifiers, as could the parallel pronouns in (32) and (34). This, of course, is an indication that QR cannot bring the quantifier out of the argument it begins within in these examples. To the extent that this shared trait is representative, it suggests that QR and Scrambling are the same.

English has an overt construction which I suggest is related to the instances of Scrambling relevant for bringing about Inverse Linking. It is named "Extrapolation from NP" by John Ross, and it associates the examples in (41) to their companions in (42).¹⁵

- (41) a. A report about almost every California city appeared today.
b. I interviewed a representative from almost every department today.
- (42) a. A report appeared today about almost every California city.
b. I interviewed a friend today from almost every department.

Of course a salient difference between Extrapolation from NP and the Scrambling in (36) is the linear position of PP and the DP it is related to. In the Scrambling cases, the PP precedes the DP; whereas in Extrapolation the PP follows the DP. Topicalized DPs in German may strand a PP they are construed with, as in (43). (See den Besten & Webelhuth (1990), Fanselow (1987), Müller & Sternefeld (1992) and Müller (1993), among others, for discussion.)

- (43) Ein Buch hat sich Hans über Syntax ausgeliehen.
a book has self Hans about syntax borrowed
(A book, Hans has borrowed about syntax.)
(de Kuthy (1998): (2))

But, Scrambling cannot arrange the terms in this way:¹⁶

- (44) *...daß niemand ein Buch gestern über die Liebe gelesen hat
...that no one a book yesterday about the love read has
(...that no one has read a book yesterday about love.)
(Müller (1993), (3): 410)

This contrast, if I am right, should not be blamed on these constructions being different, but instead on other differences in the languages' word order.

One indication that "Extrapolation from NP" is the overt manifestation of Scrambling/QR, might be indicated by the fact that it too is blocked by the presence of a genitive, something we have seen to hold of these other processes.

- (45) a. *My report appeared today about almost every California city.
- b. *I interviewed my friend today from almost every department.

I will set aside a direct comparison of "Extrapolation from NP" with Scrambling, and turn instead to examine the many correspondences between the constraints on "Extrapolation from NP" and Inverse Linking. These correspondences suggest we equate them.

Ross (1967) and Akmajian (1975) show that a PP may not Extrapolate out of a DP that is buried within another DP. Examples such as (46), in which *on Quarks* should be construed as modifying *a book*, aren't good.

- (46) *I bought [a report [about a book]] yesterday *on Quarks*.

And similarly, a quantifier buried within the complement of a DP is prevented from gaining scope outside that DP. In (47), *it* cannot be understood as bound to *almost every*.

- (47) I showed [a report [about a book on almost every department]] to its oversight committee.

Selkirk (1977) argues that a parallel constraint is at play in preventing Extrapolation from the nominal complement to a partitive, as in (48).

- (48) *I bought [many of the reports] yesterday *about Quarks*.

And here too, we find that the wide-scope interpretation of embedded quantifiers is blocked.

- (49) I showed [many of the reports about almost every department] to its oversight committee.

As in (47), it is very difficult to understand *its* as bound to the universal quantifier in (49).

Finally Rochemont and Culicover (1990) note that "Extrapolation from NP" has an effect on the relationship which holds between adjectives in the host DP and the PP that has Extrapolated. This effect can be reproduced in Inverse Linking contexts as well. The effect can be illustrated by considering the contrast in (50).

- (50) a. I dissected an alleged insect from Saturn yesterday.
- b. I dissected an alleged insect yesterday *from Saturn*.

In (50a), *from Saturn* is ambiguously related to *alleged*. On one of its meanings, this sentence can assert that there was a creature from Saturn, alleged to be an insect, that I dissected. It can also assert that there was a creature, alleged to be an insect from Saturn, that I dissected. Let's call the first interpretation -- the one in which creatures from Saturn are taken to exist -- the "X-files" reading.¹⁷ Interestingly, (50b) has only the X-files reading. In (50b), *from Saturn* cannot be

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understood to be within the scope of *alleged*. Extraposition from NP seems to fix the scope of the Extraposed item to be wider than the DP it is related to.

Now consider the Inverse Linking reading for (51).

(51) I dissected an alleged insect from every planet in our solar system.

If we make the reasonable assumption that a particular insect-like creature may originate from only one planet (that is, that creatures cannot be so large that they could reside on many planets at once), then (51) permits just the reading where *every planet in our solar system* scopes over *an alleged insect*. (That is, (51) speaks about different alleged insects from each of the planets.) And, as expected, (51) gets only the X-files reading found in (50b).

This last similarity between Extraposition from NP and QR distinguishes these operations from A Movement. As is well-known, A Movement allows for the moved item to be construed with the scope it would have had if it hadn't moved. This can be illustrated for the cases at hand by the Topicalization example in (52).

(52) ??It's Saturn_i that I dissected [an alleged insect from t_i].

This example is marginal because of the Bounding Constraints on \bar{A} Movement. (It is generally difficult to move a term out of an adjunct PP.) But to the extent that it is grammatical, it has either of the two readings that (50a) has. In particular, *Saturn* may be construed within the scope of *alleged*, yielding the anti-X-files reading. Topicalization, then, does not disambiguate these examples in the same way that both Extraposition from NP and QR seem to.

3. Conclusion

If we wish to reduce QR to one of the movement operations we independently need, I have argued that we should reduce it to Scrambling rather than A Movement. This will still achieve the attractive goal of deriving the locality conditions on QR, without stumbling on the problems reviewed here for the A Movement thesis. Further, I have argued that the Extraposition from NP phenomena be equated with Scrambling, and be seen as the source for the Inverse Linking cases.

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Notes

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1. I am ignoring here important counter-examples to this discussed in Fox and Sauerland (1995), Farkas (1995) and Farkas & Giannakidou (1996). These counterexamples involve situations where universal quantifiers gain exceptionally wide scope over indefinites; one of these which violates the finite clause restriction I have just reviewed is *Yesterday, a guide made sure that every tour to the Louvre was fun*. I do not know of similar counterexamples involving overt Scrambling, which I will argue QR should be assimilated to, so for the thesis of this paper to be maintained, it must turn out that these cases do not involve QR. Fox and Sauerland make a proposal that would have this desired outcome, but it may not be general enough to handle the cases in Farkas and Farkas & Giannakidou.
 2. I use the term "lowering" here loosely; I mean by this any method of construing moved things as if they were in their unmoved positions turns. This could be done by moving the term back into its original position, by using the copy and delete interpretation of movement or by giving traces a special interpretation. Kitahara's (1996) proposal, for instance, uses Aoun and Li's (1989) Scope Principle which allows a moved term to be interpreted as if it had the scope of its trace.
 3. Howard Lasnik has observed that some of the standard cases which are offered as evidence for Lowering could instead be seen as involving an ambiguity in the subject. He notes, more particularly, that many of these cases involve situations where an indefinite is claimed to Lower, and in fact indefinites might have different kinds of interpretations which alone could give the appearance of Lowering. Perhaps, for instance, the supposedly Lowered and unLowered readings are actually nothing more than the difference between a specific and non-specific reading of the indefinite.

I don't think all such cases of Lowering can be so reanalyzed, however. Consider, for example:

- (i) A boy seems not to be here.

This has an interpretation in which *a boy* falls within the scope of *not* – it can be used to report that it seems that there is no boy here. This reading demands that *a boy* fall within the scope of *not*, it cannot arise solely by virtue of an ambiguity in *a boy*. Further, because this interpretation does not place *seem* within the scope of *not*, we cannot try to get this interpretation by letting *not* have root-wide scope. Only Lowering *a boy* can achieve what is needed here. That Lowering might also be responsible for the ambiguity in (11) is suggested by the interaction that this ambiguity has with anaphor binding in cases such as *A boy seems to himself to be here*. See Hornstein (1995, pp. 38-9, 160).

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4. The arguments are found in Hornstein (1995, chapter 8). One difficulty with them is that they all rest on the unsupported assumption that a Lowered subject returns to the VP from which its Θ -role comes. I don't think this is a secure assumption, however; it seems almost certain that Germanic clauses hold enough positions for subjects to be Lowered to some intermediary position. Further, all but one of the arguments rests on the assumption that in VP Ellipsis contexts, the subject of the elided VP is prevented from Lowering back into that VP. (This follows from Hornstein's assumption, just mentioned, that Lowered Subjects are necessarily restored to their VPs, and certain beliefs about the identity conditions on antecedent and elided VPs.) But, as Angelika Kratzer has pointed out to me, this will founder on Hirschbühler's (1982) example:
 - (i) A Canadian flag is in front of most buildings and an American flag is \blacktriangle too. In this case, *a Canadian flag* and *an American flag* may have narrower scope than *most buildings*. On Hornstein's scheme, this means that *an American flag* must have Lowered. But this will be made impossible on the assumptions he adopts concerning VP Ellipsis. Thus, either the arguments he offers on behalf of Lowering being a necessary component in the object over subject scope reading are wrong (because they rest on incorrect presuppositions about VP Ellipsis), or (i) is a counter-example to this thesis. In fact, I think there are good reasons for rejecting Hornstein's presuppositions about VP Ellipsis.
5. The argument I report here is taken from Johnson and Tomioka (forthcoming).
6. This is precisely what Hornstein suggests.
7. Hornstein's exploration of QR includes evidence from Antecedent Contained Deletion, whose resolution is widely thought to involve QR. The same problem with adjuncts emerges in these contexts as well (witness (i)), and Hornstein recommends the same remedy sketched in the text.
8. See Evers (1975) – but the phenomenon is explored in a huge variety of more recent works as well.
9. It is not possible for VP Ellipsis to leave behind one portion of a particle construction, for example:
 - (i) a. While Jerry wouldn't call the numbers out, Sally would Δ .
 - b. *While Jerry won't call the numbers OUT, he will Δ IN.
(compare: While Jerry won't call the numbers OUT, he will call them IN.)
 - c. *While Jerry won't CALL the numbers out, he will HAND Δ .
(compare: While Jerry won't CALL the numbers out, he will HAND them out.)
10. Kennedy (1997) makes the same point with respect to cases of Antecedent Contained Deletion.
11. My thanks to Bart Hollebrandse for help with the Dutch.

12. As before, we must understand the contribution of the preposition to not disturb the relationship between the quantifier and the material it has within its scope.
13. The following example of Topicalization from Haider (1993), might illustrate the same ability.
- (i) Über Strauß hat ein Witz die Runde gemacht.
about Strauss has a joke the round made
(A joke about Strauss has made the rounds.)

Though here too there seem to be largely unknown factors involved; Pafel (1995) marks the similar (ii) as ungrammatical.

- (ii) *Von Penrose hat der Freund diese Theorie entwickelt.
of Penrose has the friend this theory developed
(The friend of Penrose has developed this theory)
(Pafel (1995) (9a): 149)
14. de Kuthy (1998) offers the nearly parallel (i) as grammatical.
- (i) Über Syntax hat Karl nur Margas Buch gelesen.
about syntax has Karl only Marga's book read
(Karl has read only Marga's book about syntax.)
(de Kuthy (1998) (10))

Presumably, the improvement with this example is related to the fact that the PP has Topicalized here, rather than Scrambled. The constraints on Topicalization in German are known to be different, and more liberal, than those on Scrambling.

15. What, precisely, the relationship is between an Extraposed phrase and the DP it modifies has been a point of contention, as has been the similar relationship between a “Scrambled” PP and the DP it is construed with in German. On some accounts, there is no movement relationship between these constituents – for Extraposition from NP, see especially Culicover and Rochemont (1990) and Rochemont and Culicover (1990), and for the cases in German, see de Kuthy (1998) and references cited therein, and Müller (1993: 2.3.3.4) for something of a hybrid suggestion. The matter is undecided because of lexical and other influences whose source has not been completely identified. I will continue to speak as if the relationship is Movement (see Johnson (1991) for some discussion of the Extraposition case).
16. This example is ungrammatical, of course, only on the reading where *über die Liebe* is construed as a modifier of *ein Buch*.
17. After the mysteriously popular television show.