

## Against Bans on Lowering

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A number of syntactic theories posit explicit bans on lowering operations. Such bans are largely redundant on cyclic approaches to the syntactic derivation, which can rule out most instances of lowering without an explicit ban. I concentrate here on one instance of lowering not ruled out by the cycle, namely, an Agree relation between a probe and a goal in the probe's own specifier. Facts about Bulgarian *wh*-movement suggest that operations of this kind are available in principle and that lowering therefore should not be banned.

*Keywords:* Bulgarian, *wh*-movement, lowering, cycle

Among the many ungrammatical examples that we want our theory to rule out are “lowering” examples of the type in (1).

- (1) \*She told \_\_\_\_ [who John arrived].  


Assuming that examples like (1) are to be ruled out in the syntax,<sup>1</sup> we could imagine a number of means of ruling them out explicitly, including conditions on operations like movement or Agree, or on the representations created by such operations. We might, for instance, state that a probe may only enter an Agree relation with (hereafter, Agree with) a goal in its c-command domain, or that chains created by movement must involve a head that c-commands its tail.

On the other hand, many examples of lowering, including the one in (1), will be ruled out for us by current approaches to cyclicity (see Chomsky 1995, 2000, 2001, and much other work). In these approaches, the tree is assembled from the bottom up and each probe must do all the Agreeing it can within the cycle of the derivation in which it is introduced (perhaps before any additional structure is introduced). This kind of cyclicity will rule out (1), as long as the cycle containing the embedded interrogative C excludes *who*: C must perform its Agree relations with

Many thanks to Roumyana Pancheva and Marina Todorova for their Bulgarian judgments. All Bulgarian data here are from one or the other or both of them, except where noted. Thanks, too, to David Pesetsky, to two anonymous reviewers, and to the audience at NELS 32 for helpful discussion. Any errors are my own responsibility.

The abbreviations used in this article are *AUX* (for auxiliary) and *DIST* (for a distributive marker).

<sup>1</sup> As a reviewer points out, one could also imagine using a semantic condition to rule out cases like this, perhaps requiring a *wh*-phrase to bind the variable supplied by its trace (though one would have to be careful to state the semantic requirement so that a pronominal variable could not satisfy it). The derivation in (i) shows a non-*wh*-movement case that we might want to rule out with a ban on lowering.

- (i) a. it seems [*Bill* to believe [\_\_\_\_to be likely [that Susan will win]]]

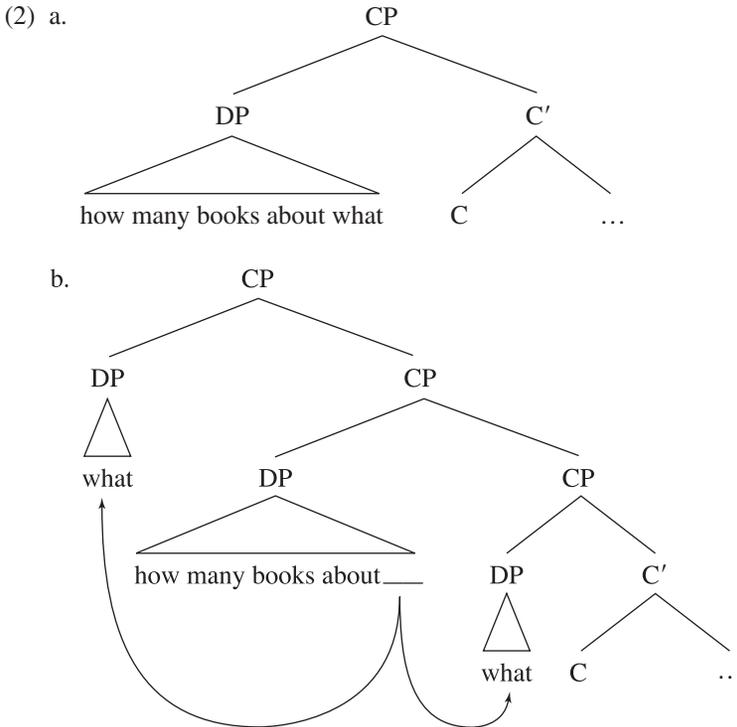


- b. \*it seems [\_\_\_\_to believe [*Bill* to be likely [that Susan will win]]]

Here, the DP *Bill* lowers from its  $\theta$ -position in (ia) to a Case position in (ib) (possibly first raising to satisfy the Extended Projection Principle within its clause, if this is a concern; alternatively, the expletive *it* could be base-generated in this clause and raise to the matrix clause). Without a ban on lowering, we might expect (ib) to be able to mean something like ‘It seems that Bill believes it to be likely that Susan will win.’

*wh*-phrases at a point in the derivation at which the *wh*-phrase *who* does not yet exist, and the derivation crashes.

There is at least one case in which a cyclicity-based approach to the ill-formedness of (1) might differ in its predictions from an approach that posits an explicit ban on lowering. The relevant case has to do with Agree relations between a probe and a goal embedded in the probe's specifier, as in the derivation in (2) (in (2b), to avoid prejudging the issue, I have drawn movement arrows in both of the two conceivable directions for this kind of movement).



A theory that banned lowering—for example, by requiring probes to *c*-command their goals—might rule out Agree relations like the one in (2b). On the other hand, a theory based on cyclicity might allow them. If a probe can continue to Agree after a specifier for it has been introduced, then an Agree relation between a probe and a goal embedded in the probe's specifier ought to be perfectly permissible. We will see some evidence that this is the case, drawn from facts about multiple *wh*-movement in Bulgarian.

Bulgarian does have multiple questions whose word order is consistent with a derivation of the type in (2).

- (3) a. [Ot kakvo] [kolko gord \_\_\_\_] beše Ivan?  
 of what how proud was Ivan  
 'How proud of what was Ivan?'

- b. [Ot koi strani] [po kolko studenta \_\_\_\_] predstavili na Ivan?  
 from which countries DIST how-many students you-introduced to Ivan  
 ‘How many students from which countries did you introduce to Ivan?’

In what follows, I will try to show that Bulgarian questions like the ones in (3) (which I will refer to here as *Russian-doll questions*, since they involve a *wh*-phrase with another, smaller *wh*-phrase inside) do have a derivation like the one in (2): for instance, that a question like (3a) involves movement of the entire *wh*-phrase *kolko gord ot kakvo* ‘how proud of what’ to Spec,CP, followed by movement of the *wh*-phrase *ot kakvo* from its position inside that moved *wh*-phrase to another Spec,CP. Of course, there are a number of other imaginable derivations for this word order. I will try to show that the *wh*-phrase that begins the derivation embedded in another *wh*-phrase (henceforth, the *embedded wh*-phrase: *ot kakvo* ‘of what’ in (3a)) is required to move from its base position via *wh*-movement; that this movement does begin from a position inside another *wh*-phrase (and not, for example, from an extraposed position, at least not in all cases); that the landing site of *wh*-movement is an additional specifier of C (and not, for example, a high structural position within the embedding *wh*-phrase); and, finally, that movement of the embedded *wh*-phrase takes place after the *wh*-phrase containing it has moved to Spec,CP.

I will conclude on the basis of these arguments that derivations like the one in (2) are permissible and that lowering should therefore not be banned—there is no c-command condition on the Agree relation between a probe and a goal, which can be constructed whenever the probe and the goal are both present in the derivational workspace (ignoring for the moment other possible conditions on Agree, such as locality). When lowering is banned, on this view, it is because the potential goal is not present in the derivational cycle in which the probe triggers Agree relations.<sup>2</sup>

### 1 What Type of Movement Is Involved?

It appears that the embedded *wh*-phrase in a Russian-doll question is undergoing *wh*-movement; that is, it is undergoing obligatory overt movement of a kind that is only possible for *wh*-phrases. We can see this most clearly in structures where the base position of the embedded *wh*-phrase has phonologically overt material on both sides of it in the *wh*-phrase of which it is a part. In (4), for example, the complement PP *po matematika* ‘of mathematics’ must be to the right of the head noun *studenti* ‘students’ and to the left of the adjunct PP *ot Bulgaria* ‘from Bulgaria’.

- (4) a. Vidja studenti [po matematika] [ot Bulgaria].  
 you-saw students of mathematics from Bulgaria  
 ‘You saw students of mathematics from Bulgaria.’

<sup>2</sup> A reviewer notes that this makes the exact definitions of the cyclic domains particularly important. What I have to say here will be compatible with a number of possible definitions of the cycle, including the one in Chomsky 1995, in which the unit of the cycle is effectively the maximal projection, and the one in Chomsky 2000, 2001, in which CPs and some (or all; see Legate 2003) vPs are cyclic domains. Hopefully, future work will uncover more instances of this type of derivation and help to clarify this issue, along with many others. See Rezac 2003 for highly relevant discussion.

- b. \*Vidja [*po matematika*] studenti [ot Bulgaria].  
 c. \*Vidja studenti [ot Bulgaria] [*po matematika*].

On the other hand, if we consider the corresponding Russian-doll question, the facts change dramatically. The embedded *wh*-phrase can no longer be in its base position, as in (5a); it must be either on the left of the embedding *wh*-phrase (5b) or on the right (5c).

- (5) a. \*Kolko studenti [*po kakvo*] [ot Bulgaria] vidja?  
       how-many students of what from Bulgaria you-saw  
       ‘How many students of what from Bulgaria did you see?’  
 b. [*Po kakvo*] kolko studenti [ot Bulgaria] vidja?  
 c. Kolko studenti [ot Bulgaria] [*po kakvo*] vidja?

Thus, the embedded *wh*-phrase appears to be undergoing obligatory overt *wh*-movement.

## 2 Where Does *Wh*-Movement Begin?

Even granted that *wh*-movement of the embedded *wh*-phrase is involved, however, we might wonder whether such movement actually begins from the base position of the *wh*-phrase, as I have proposed above. Someone might suggest, for instance, that the first step in the derivation of Russian-doll questions is some kind of scrambling or extraposition of the embedded *wh*-phrase out of the *wh*-phrase containing it, after which multiple question formation can take place in the usual way.

In fact, the data in (4)–(5) give us a reason to reject an approach of this kind. Bulgarian extraposition appears to be more constrained than its English counterpart; as we saw in (4), extraposition of the kind that would be needed is not ordinarily possible. Still, our understanding of extraposition processes is murky enough that the possibility of extraposition in Russian-doll questions probably cannot be completely discounted. It is possible, for instance, that extraposition of *wh*-phrases is somehow less constrained than extraposition of non-*wh*-phrases.

However, even if we were to posit a type of extraposition that only affects *wh*-phrases, it is not clear that the problem would then be solved. Suppose that there is an extraposition operation that applies to the embedded *wh*-phrase. This operation will presumably move the embedded *wh*-phrase to a position c-commanding the larger *wh*-phrase in which it was embedded. From what we know independently about Bulgarian *wh*-movement, we would expect such a configuration to yield the word order in (5b) (repeated as (6b)), but not the order in (5c) (repeated as (6c)).

- (6) a. \*Kolko studenti [*po kakvo*] [ot Bulgaria] vidja?  
       how-many students of what from Bulgaria you-saw  
       ‘How many students of what from Bulgaria did you see?’  
 b. [*Po kakvo*] kolko studenti [ot Bulgaria] vidja?  
 c. Kolko studenti [ot Bulgaria] [*po kakvo*] vidja?

Work on multiple *wh*-movement in Bulgarian (see Rudin 1988, Bošković 1997, 1999, Richards

1997, 2001) has established that the order of the moved *wh*-phrases reflects the base *c*-command relations between them: if the base position of *wh*-phrase  $\alpha$  *c*-commands that of *wh*-phrase  $\beta$ , then  $\alpha$  precedes  $\beta$ . When the *wh*-phrases are a subject and an object, for instance, the subject must precede the object (Rudin 1988:472–473).

- (7) a.  Koj kogo \_\_\_ vizda \_\_\_?  
 who whom sees  
 'Who sees whom?'

- b. \*Kogo koj \_\_\_ vizda \_\_\_?  


Thus, if multiple questions like the ones in (6) involved extraposition of the embedded *wh*-phrase as a first step, followed by independent *wh*-movement of the two *wh*-phrases, we would expect the embedded *wh*-phrase to be required to precede the *wh*-phrase in which it was embedded. This order is possible, as we have seen, but it is not required. The word order in (6c), then, is the one of particular interest, since an extraposition analysis is clearly inappropriate here.

There is one domain in which the constraints on ordering of multiple *wh*-phrases in Bulgarian are relaxed, namely, that of D-linked multiple questions.

- (8) a. Koj profesor koja kniga e vidjal?  
 which professor which book AUX seen  
 'Which professor saw which book?'  
 b. ?Koja kniga koj profesor e vidjal?

We might wonder, then, whether Russian-doll questions show some optionality of ordering because they are D-linked. D-linking is difficult enough to define precisely that it is probably impossible to rule out this hypothesis completely, but it seems unlikely to cover all of the relevant cases. Consider, for example, the questions in (9), where the embedded *wh*-phrase *ot kakvo* 'of what' undergoes *wh*-movement either to the left or (I assume, string-vacuously; recall from (6) that movement appears to be obligatory) to the right.

- (9) a. [Ot kakvo] [kolko gord \_\_\_] beše Ivan \_\_\_?  
 of what how proud was Ivan  
 'How proud of what was Ivan?'  
 b. [Kolko gord \_\_\_] [ot kakvo] beše Ivan \_\_\_?

However, neither of the *wh*-phrases in (9) seems to be D-linked; they are not ordinarily able to be freely reordered with other *wh*-phrases, as (10)–(11) show.

- (10) a. Koj [ot kakvo] beše gord?  
 who of what was proud  
 'Who was proud of what?'  
 b. \*[Ot kakvo] koj beše gord?

- (11) a. Koj [kolko gord ot tova] beše?  
           who how proud of this was  
           ‘Who was how proud of this?’  
       b. \*[Kolko gord ot tova] koj beše?

In this section, we have seen two reasons to believe that *wh*-movement of the embedded *wh*-phrase actually does take place out of the *wh*-phrase in which it is embedded, rather than being fed by extraposition of the embedded *wh*-phrase. First, extraposition of the relevant *wh*-phrases may very well be impossible. Second, even if it is possible, a theory that posited extraposition would make the wrong predictions about the ordering of the two *wh*-phrases, incorrectly forcing them to be in only one of the two logically possible orders. We have seen that a derivation without extraposition must be at least possible for some Russian-doll questions, and may be required for all of them.

### 3 Where Does *Wh*-Movement Land?

Having determined that *wh*-movement of the embedded *wh*-phrase does in fact begin inside the embedding *wh*-phrase, let us consider where this *wh*-movement lands. I have been claiming that the landing site of *wh*-movement is an additional specifier of CP, but we might entertain the hypothesis that it is in fact some position within the larger, containing *wh*-phrase. This hypothesis might be particularly attractive in the framework proposed by Grewendorf (2001), in which *wh*-phrases may move not only by substitution to Spec,CP but also by adjunction to other *wh*-phrases.

There do seem to be reasons, however, to believe that the two *wh*-phrases are in distinct specifiers by the end of the derivation. For one thing, it is possible to separate the two *wh*-phrases involved in a Russian-doll question with a third *wh*-phrase.<sup>3</sup>

- (12) [Ot koi strani] [na kogo] [po kolko studenta \_\_\_\_] predstavi?  
       from which countries to whom DIST how-many students you-introduced  
       ‘How many students from which countries did you introduce to whom?’

Moreover, if we embed a Russian-doll question in another clause with a [+wh] C, either of the two *wh*-phrases may move into the higher clause.

<sup>3</sup> Thanks to a reviewer for suggesting that I investigate this. Unfortunately, it seems to be impossible to construct relevant examples that are not D-linked, which may somewhat dampen the force of the examples, depending on one’s theory of why D-linked *wh*-questions offer more freedom of *wh*-ordering (see the examples in (8)). In order to be illuminating, the relevant questions need to have a Russian-doll *wh*-phrase c-commanding another *wh*-phrase (the reverse order, in a non-D-linked question, would lead us to expect that the Russian-doll phrase would have to follow the other phrase); and while DP *wh*-phrases are capable of appearing in such a configuration, any DP complicated enough to be a Russian-doll *wh*-phrase tends to get a D-linked interpretation.

- (13) a. [Ot koi strani] se opitvaš da razbereš [[kolko studenti \_\_\_\_] e  
 from which countries you-try to find-out how-many students AUX  
 ubil Ivan \_\_\_\_ ]?  
 killed Ivan  
 ‘From which countries are you trying to find out [how many students \_\_\_\_] Ivan  
 killed?’
- b. [Kolko studenti \_\_\_\_] se opitvaš da razbereš [[ot koi strani] e ubil Ivan \_\_\_\_]?  
 ‘[How many students \_\_\_\_] are you trying to find out [from which countries] Ivan  
 killed?’

(13a), of course, is also well formed in English. The interesting case is (13b); here, the embedded *wh*-phrase has remained behind in the lower clause, while the *wh*-phrase of which it was a part has moved up into the higher clause. This seems inconsistent with a theory in which the embedded *wh*-phrase is moving to a position within the *wh*-phrase in which it is contained; the two *wh*-phrases need to be separable from each other.

#### 4 When Does *Wh*-Movement Take Place?

So far, I have tried to show that the embedded *wh*-phrase is undergoing obligatory *wh*-movement, from a position inside another *wh*-phrase, to another specifier of CP (besides the one occupied by the embedding *wh*-phrase). Now I will address questions about the timing of the *wh*-movements. Does the embedded *wh*-phrase undergo *wh*-movement before the *wh*-phrase in which it is embedded does, or after? Or is there some third option?

These are difficult questions to answer, and the answers I give here will be somewhat theory-dependent. Consider again examples like (6b–c), repeated here.

- (14) a. [*Po kakvo*] [kolko studenti \_\_\_\_ ot Bulgaria] vidja?  
 of what how-many students from Bulgaria you-saw
- b. [Kolko studenti \_\_\_\_ ot Bulgaria] [*po kakvo*] vidja?  
 how-many students from Bulgaria of what you-saw  
 ‘How many students of what from Bulgaria did you see?’

The theory of *wh*-phrase ordering in Bulgarian offered in Richards 1997, 2001, suggests that each *wh*-phrase “tucks in” to a specifier below any specifiers that exist when movement takes place; this is taken to follow from general principles of locality, which require *wh*-movement to land in a position as close to the probe, and to the tail of the chain, as possible. If this theory is on the right track, then the embedded *wh*-phrase *po kakvo* ‘of what’ in (14b), at least, must be landing in Spec,CP after the *wh*-phrase in which it is embedded does.

Moreover, suppose we assume that Bulgarian has some version of the A-over-A Condition.<sup>4</sup>

<sup>4</sup> As a reviewer points out, in order for the A-over-A Condition to be relevant here at all, the *wh*-movements involved in Russian-doll questions will all have to be triggered by the same kind of Agree relation (assuming, following Müller

We might make this condition follow from the same general principles of locality that yield Superiority effects, assuming that when one phrase dominates another, the dominating phrase is closer to a probe  $c$ -commanding them both than the dominated phrase is.<sup>5</sup> On this approach to the A-over-A Condition, the probe should not be able to Agree with the embedded *wh*-phrase before it Agrees with the *wh*-phrase in which it is embedded; that is, it should be forced to Agree with the embedding *wh*-phrase first (just as in the Superiority case, the probe must Agree with the higher *wh*-phrase first and is then free to Agree with the lower).<sup>6</sup>

We could predict the well-formedness of both of the examples in (14) by using a locality condition like Shortest in (15), which is taken to constrain relations between all the participants in a movement dependency (namely, the probe and the head and tail of the chain).<sup>7</sup>

(15) a. *Path*

The *path* between  $\alpha$  and  $\beta$  is the nonnull set of nodes  $x$  such that  $\alpha$   $c$ -commands  $x$  and  $x$  dominates  $\beta$  (see Pesetsky 1982).

b. *Shortest*

The relation between  $\alpha$  and  $\beta$  obeys *Shortest* iff there is a path  $\pi$  between  $\alpha$  and  $\beta$  such that for any  $\gamma$  distinct from both  $\alpha$  and  $\beta$ ,  $\pi$  is a subset of the path  $\pi'$  created by substituting  $\gamma$  for either  $\alpha$  or  $\beta$ .

In Richards 1997, 2001, a version of Shortest derived the effects of Shortest Attract, by applying to the relation between the probe and the goal. It also derived the ‘‘tucking-in’’ requirement, by applying to the relation between the head and the tail of the movement chain, and also to the relation between the head of the chain and the probe.<sup>8</sup> The latter two requirements both forced

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(1996) and Kitahara (1997), that the A-over-A Condition only affects interactions between Agree relations of the same type). If we were willing not to make this assumption, then the A-over-A Condition would become irrelevant; Russian-doll questions could just be another instance of ‘‘remnant fronting,’’ with the embedded *wh*-phrase undergoing Move before the embedding *wh*-phrase does. The reviewer offers the specific Italian example of *ne*-cliticization out of a *wh*-phrase that subsequently moves to a position above *ne*, as in (i).

(i) [Quanti *ne*] *ne* inviterete?  
how-many of-them will-you-invite

Here, *ne*-cliticization and *wh*-movement are presumably triggered by different features. On the other hand, the Bulgarian Superiority facts alluded to in section 2 seem to indicate that Bulgarian C is required to Agree with the higher of two *wh*-phrases first. If multiple *wh*-movements are triggered by different features, then it is not clear why this should be so.

<sup>5</sup> I will shortly offer a definition of *closeness* that will have this result; see also Fitzpatrick 2002 for discussion.

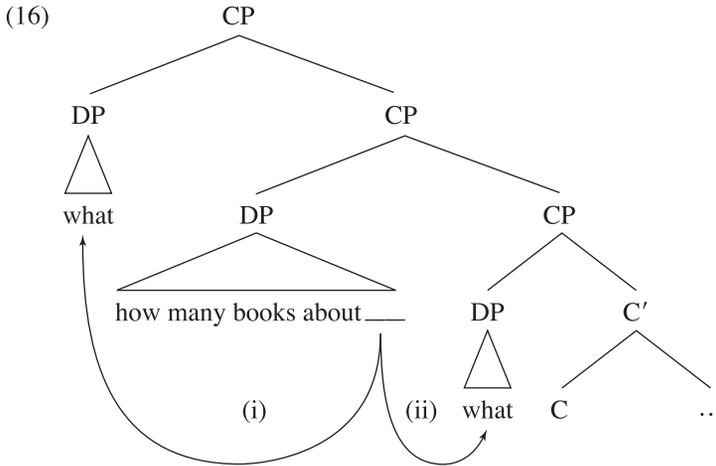
<sup>6</sup> See Richards 1998 and Hiraiwa 2001 for discussion of why locality might allow the lower *wh*-phrase to be Agreed with once the higher one has been. See footnote 9 for more discussion of Hiraiwa 2001.

<sup>7</sup> Another way of dealing with the apparent optionality in (14), pointed out to me by David Pesetsky, would be to abandon the claim defended in section 2 that extraposition is not involved in Russian-doll questions. Since extraposition would give the word order in (14a), the word order in (14b) could then be derived by the kind of derivation discussed here, with obligatory tucking-in. A third option would be to derive tucking-in in some other way. A theory that more or less directly states that the hierarchical relations among multiple goals are to be preserved as much as possible might account for the facts straightforwardly: when there is a  $c$ -command relation between two *wh*-phrases, it must be preserved; and in Russian-doll cases, where some disruption of the hierarchical relation between the *wh*-phrases is inevitable if they are to occupy distinct specifiers, both of the logically possible options are available.

<sup>8</sup> The reader can confirm that Shortest also yields the A-over-A Condition. If  $\gamma$  dominates  $\beta$  and is  $c$ -commanded by the probe  $\alpha$ , then the path  $\pi'$  between  $\alpha$  and  $\gamma$  will necessarily be a subset of the path  $\pi$  between  $\alpha$  and  $\beta$ ; at a minimum, it will fail to include  $\gamma$ , which is a member of  $\pi$ .

the head of the chain to be as low as possible, hence below any existing specifiers; the theory therefore had a certain redundancy, since either of these requirements would have had the desired effect in this case.

In the Russian-doll cases, however, the redundancy disappears. Consider again the tree in (2b), repeated as (16).



Clearly, Shortest applied to the relation between the probe C and the head of the movement chain prefers the movement in (ii) over that in (i); the head of the chain is closer to the probe in (ii) than it is in (i). On the other hand, Shortest applied to the head and the tail of the chain prefers (i) to (ii); there is no path  $\pi$  at all between the head and the tail of the chain in (ii), and hence there can be no path that satisfies Shortest. Shortest therefore fails to choose between these options, and both are permissible.

We have seen that certain assumptions would force us to conclude that, in a Russian-doll question, the Agree relation with the embedded *wh*-phrase is created second (because of the A-over-A Condition) and that the embedded *wh*-phrase is the second to land in a specifier of CP (because of tucking-in). To put it another way, *wh*-movement of the embedded *wh*-phrase begins after *wh*-movement of the *wh*-phrase in which it is embedded begins, and it ends after *wh*-movement of the embedding *wh*-phrase ends.

If *wh*-movement is instantaneous, then we may be finished; *wh*-movement of the embedded *wh*-phrase happens after the *wh*-phrase in which it is embedded has already moved to Spec,CP, and thus must involve an Agree relation between the probe C and a goal in its own specifier.<sup>9</sup> However, it is at least conceivable that movement operations could be interspersed with each

<sup>9</sup> Hiraiwa's (2001) work on Multiple Agree offers a third option: C could agree with both the embedded and the embedding *wh*-phrases simultaneously, while both are in situ. This theory would allow a ban on lowering to be preserved and would differ from the one developed here in at least one respect: Agree with a goal in a merged specifier of the probe would be ruled out.

other. If *wh*-movement is successive-cyclic in the way envisioned in Chomsky 2000, 2001, for instance, then it would certainly be possible in principle for an operation to target the embedded *wh*-phrase after *wh*-movement of the embedding *wh*-phrase has already begun but before it reaches its landing site.

Such interleaving of *wh*-movement operations will have to be constrained, however. Consider (17), a straightforward illustration of Superiority.

- (17) a. What did you give \_\_\_\_\_ to whom?  
 b. \*To whom did you give what \_\_\_\_\_?

As I mentioned immediately above, we could certainly imagine allowing movement of *to whom* in the examples in (17) to begin taking place after movement of *what* had begun but before *what* had reached its landing site (perhaps while *what* was stopped at the edge of the vP phase, for instance). This kind of ‘‘tandem movement’’ will have to be subject to constraints, however, which prevent the generation of examples like (17b). Locality (in this case, Superiority, presumably an instance of some version of Shortest Attract) cannot simply be satisfied by a higher *wh*-phrase being the first to begin its journey up the tree; the lower *wh*-phrase will have to be unable to pass the higher one.

Similar reasoning ought to apply in the Bulgarian case under consideration. If the A-over-A Condition (again, ideally an incarnation of Shortest Attract) bans Agree with the embedded *wh*-phrase while the embedding *wh*-phrase remains in situ, then this ban should be in force for the entire duration of the embedding *wh*-phrase’s transition to Spec,CP. Just as the lower *wh*-phrase is unable to ‘‘pass’’ the higher in the Superiority case, it should be unable to do so in the A-over-A case as well. For all we know, the embedded *wh*-phrase may undergo some steps of *wh*-movement within the embedding *wh*-phrase before the embedding *wh*-phrase has landed in Spec,CP, but the final step of actually extracting the embedded *wh*-phrase into a separate specifier of Spec,CP should only become possible once the embedding *wh*-phrase has landed in Spec,CP (and thus become unavailable as a goal). In other words, it looks as though *wh*-extraction of the embedded *wh*-phrase must take place after the *wh*-phrase in which it is embedded has reached Spec,CP. To put it yet another way, C must be able to Agree with an embedded *wh*-phrase in C’s own specifier.<sup>10</sup>

## 5 Conclusion

I have argued here that a probe may Agree with a goal in its own specifier, and that this material then moves to another specifier of the same head. If true, this conclusion removes an obstacle to

<sup>10</sup> One disturbing alternative derivation remains. What if C is not attracting the embedded *wh*-phrase out of its specifier, but rather attracting the ‘‘original copy’’ of the embedded *wh*-phrase out of the trace of *wh*-movement of the embedding *wh*-phrase? We could then stick to the assumption that heads may only attract out of their c-command domain (though we would need to assume that material inside a trace is available for later syntactic operations). In principle, there should be differences in empirical predictions between this kind of derivation and the one proposed in the text. If the embedded *wh*-phrase is being extracted from the trace, for instance, then it is crossing all the material between C and the trace; if it is being extracted from the specifier, it does not cross that material (though the *wh*-phrase in which it is embedded does). Future work will have to determine whether this is the case.

a simplification of the theory: we no longer need to state a “domain” that the probe is allowed to search in order to determine what it should Agree with. If we assume the version of Cyclicity posited in Chomsky 1995, 2000, 2001, then lowering is prevented by an essentially tautological condition; the probe must Agree with a goal that is present in the structure at the point in the derivation at which Agree takes place.

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