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## **Icelandic Control Is Not A-Movement: The Case from Case**

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# Remarks and Replies

## **Icelandic Control Is Not A-Movement: The Case from Case**

*Jonathan David Bobaljik  
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A rich literature on Icelandic syntax has established that infinitival complements of obligatory control verbs constitute a case assignment domain independent from the matrix clause, and in this differ systematically from all types of A-movement, which manifest case dependence/preservation. As Landau (2003) has observed, these facts provide significant counterevidence to the movement theory of control (Hornstein 1999 and subsequent work). Boeckx and Hornstein (2006a) attempt to defend this theory in light of data from Icelandic. We offer here a review of the relevant literature, and we show that Boeckx and Hornstein's reply fails on several counts. We further argue that contrary to their claims, PRO in Icelandic receives structural rather than default (nominative) case, leaving the movement theory with no account for the distinction between PRO and lexical subjects.

*Keywords:* case transmission, case concord, control, raising, Icelandic, PRO

### **1 Introduction**

The relevance of case in Icelandic for theories of control and raising was first noted by Andrews (1976, 1982) and Thráinsson (1979) and explored in depth by Andrews (1990) and Sigurðsson (1989, 1991). As Landau (2003) has observed, the facts of case in Icelandic provide significant counterevidence to the movement theory of control (MTC), as presented in Hornstein 1999, 2003 and Boeckx and Hornstein 2004, 2006a,b. The core fact is this: infinitival complements of obligatory control (OC) verbs generally constitute an independent case assignment domain from the matrix clause, and in this property, differ systematically from all types of A-movement (passive, raising, exceptional case marking (ECM)/raising to object). These data provide some of the most compelling evidence that the subject of OC infinitives is a null category distinct in kind from trace. This is one result whose implications are recognized across frameworks (Government-

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Binding (GB) Theory, Lexical-Functional Grammar), but which is directly at odds with the core thesis of the MTC. In their 2006a article, Boeckx and Hornstein (hereafter B&H in the context of 2006a) provide the first attempt to defend the MTC in light of Icelandic data. They contend that “the argument does not undermine the movement approach when the facts are considered in their entirety” (p. 591; see also p. 604 and Boeckx and Hornstein 2004:448).

Despite B&H’s claim to have considered “the facts . . . in their entirety,” key data discussed in the literature that they cite are not mentioned in their article (including examples of the type given in Landau 2003 to motivate the counterargument). The result is a misleading characterization of the established results in this area, and theoretical proposals that are at odds with the known facts.

In the service of permitting a fairer evaluation of future debates, we offer here a careful review of the relevant literature. Rather than advancing new data or theoretical proposals, we restrict ourselves to discussing the empirical facts presented in the literature prior to 2003 and the conclusions to be drawn from them. We compare these with the claims (factual and theoretical) in B&H 2006a and show that this article fails to explain the classic raising/control contrast in case agreement patterns. In addition, the considerations that lead to this conclusion expose an important lacuna in the MTC, namely, its failure to explain the fundamental fact of OC: that controlled subjects are unpronounced.<sup>1</sup>

In section 2, we review the classic contrast in Icelandic between A-chains, in which quirky case is preserved, and OC dependencies, in which it is not. We show that B&H’s core theoretical proposal for OC (“case overwriting”) both fails to capture this contrast and generates false predictions elsewhere. In section 3, we address B&H’s claim that the nominative case seen on embedded secondary predicates (SPs) and floating quantifiers (FQs) is a marked, default case. We show that all the available evidence points to the opposite conclusions: embedded nominative is neither marked nor default, but standard structural case. In section 4, we discuss the detrimental implications of this conclusion for the MTC; essentially, lexical subjects are overgenerated in OC infinitives, a result unchanged even when their case is inherited from the controller or locally determined to be quirky. In section 5, we show that inherent/quirky case *can* be transmitted to PRO, contra B&H’s claims; this undermines their implied account of why embedded nominative is not marked under a controller marked with inherent/quirky case. Finally, in section 6 we address some broader issues of methodology and linguistic ontology underlying this debate.

## 2 The Central Issue: Case in Control versus A-Movement

The primary challenge to the MTC from Icelandic case facts is that control is systematically unlike all forms of A-movement. For expository reasons, we consider environments where the embedded predicate is a quirky case assigner (sections 2.1–2.2) separately from those where it

<sup>1</sup> As we were writing this article, we learned of Sigurðsson, to appear, an independent, convergent reply to B&H 2006a. We thank Halldór Sigurðsson for making available to us a draft of his reply. We have not incorporated the new data from Sigurðsson, to appear, as our main argument is that B&H’s proposal cannot adequately deal with the data that were already available when B&H 2006a was written.

is not (section 2.3). However, the point is the same: it is only in control configurations that case independence between the matrix and embedded environments obtains.

### 2.1 Case Preservation: The Classic Paradigms

As Andrews (1990:189) comments, one of “the two most striking peculiarities of [quirky] case-marked NPs [is] the phenomen[on] of case preservation.” In GB terms, quirky case-marked DPs behave for all manner of case-driven movements as if they were moving for case reasons. However, they systematically retain the quirky case associated with their  $\theta$ -assigning predicate.<sup>2</sup> We reproduce here Andrews’s (1990:189–190) illustration of case preservation under passive (in (1)), ECM/raising to object (in (2)), and passive of ECM (in (3)); all examples are paired with garden-variety structural case examples.<sup>3</sup>

- (1) a. Strákarnir voru kitlaðir.  
the.boys.M.PL.NOM were tickled.M.PL.NOM  
‘The boys were tickled.’  
b. Strákunum var bjargað.  
the.boys.M.PL.DAT was rescued.DFLT  
‘The boys were rescued.’
- (2) a. Ég tel strákana (hafa verið) kitlaða.  
I believe the.boys.M.PL.ACC to.have been tickled.M.PL.ACC  
‘I believe the boys to have been tickled.’  
b. Ég tel strákunum (hafa verið) bjargað.  
I believe the.boys.M.PL.DAT to.have been rescued.DFLT  
‘I believe the boys to have been rescued.’
- (3) a. Strákarnir eru taldir (hafa verið) kitlaðir.  
the.boys.M.PL.NOM are.PL believed.M.PL.NOM to.have been tickled.M.PL.NOM  
‘The boys are believed to have been tickled.’  
b. Strákunum er talið (hafa verið) bjargað.  
the.boys.M.PL.DAT is.SG believed.DFLT to.have been rescued.DFLT  
‘The boys are believed to have been rescued.’

<sup>2</sup> While we are not aware of any questions regarding the status of the examples discussed here (except where specifically mentioned below), we do note that Sigurðsson (1989:96n31) and Andrews (1990) report some variation in case preservation effects with certain other raising predicates. So far as we know, the claim that the judgments of interest systematically reflect a distinction between A-movement and control remains unchallenged.

<sup>3</sup> All examples are taken from the literature, as noted. A few examples have been slightly modified—for instance, by substituting a DP of a different gender so that case is shown unambiguously, or by explicitly presenting ungrammatical forms that are implied but not given in the sources. In the few cases where we have made such changes, we have cited the example as “after” the source. We thank Höskuldur Thráinsson for his patient help in checking all modifications.

The following abbreviations are used in this article: *ACC* = accusative, *DAT* = dative, *DFLT* = default, *F* = feminine, *GEN* = genitive, *M* = masculine, *NOM* = nominative, *PL* = plural, *SG* = singular.

Andrews characterizes these examples quite succinctly: “As the structurally case-marked NPs of the (a) examples shift between subject and object positions, their case shifts between nominative and accusative, but the [quirky] case-marked NPs in the (b) examples remain dative” (p. 190).<sup>4</sup> Thus, the distribution of DPs marked with quirky case precisely tracks that of DPs marked with structural case. However, the case value that surfaces on the moved DP is always the “lowest” case value, that is, the one determined by the  $\theta$ -assigning predicate. Indeed, it was this mismatch between distribution (like structural case) and form (case preservation) that constituted the landmark challenge to GB case theory, as articulated in Zaenen, Maling, and Thráinsson 1985.

Control is strikingly different (see Andrews 1976, 1982, 1990, Thráinsson 1979, Sigurðsson 1989, 1991; hereafter labeled collectively as ATS). In control structures, the case of the controller is determined locally: the controller DP bears the locally appropriate structural case. Case preservation is ungrammatical, as shown here:

- (4) a. Honum var bjargað af fjallinu.  
 him.DAT was rescued.DFLT of the.mountain  
 ‘He was rescued from the mountain.’  
 b. Hann/\*Honum vonast til að verða bjargað af fjallinu.  
 he.NOM/\*DAT hopes for to be rescued.DFLT of the.mountain  
 ‘He hopes to be rescued from the mountain.’  
 (after Andrews 1990:198)

Under the standard analysis of control, case fails to be preserved because there are two distinct nominal elements involved. In GB, these are the controller DP and PRO, each with one case and one  $\theta$ -role. This corresponds to “anaphoric control” in Lexical-Functional Grammar, whereby the PRO subject of the embedded clause (SCOMP) is a distinct F-structure object from the matrix controller (see Andrews 1990:197).

The failure of case preservation under (nonquirky) object control is arguably shown by examples such as (5).<sup>5</sup>

- (5) (#)Jón bað hann að leiðast ekki einum.  
 Jon.NOM asked him.ACC to be.bored not alone.DAT  
 ‘Jon asked him not to be bored alone.’  
 (after B&H 2006a:594, (7))

<sup>4</sup> That the quirky case-marked DPs are indeed subjects and objects is exceptionally well established in an extensive literature beginning with Andrews 1976 and Thráinsson 1979; see especially Zaenen, Maling, and Thráinsson 1985 and Sigurðsson 1989. The arguments do not depend on correlating surface position and grammatical function.

<sup>5</sup> B&H indicate such examples to be acceptable, while Thráinsson (pers. comm.; see also Thráinsson 1979:301 and passim) finds them to be semantically anomalous (we indicate this with #) on the grounds that object control verbs select agentive complements, but quirky subjects are never agentive. The narrow point to be made here is that, to the extent that speakers accept object control of quirky-case-assigning infinitives, they manifest obligatory case independence. Besides adding the “#”, we have modified B&H’s example by using a controller DP that overtly manifests the accusative/dative distinction.

The challenge that these facts pose for the MTC should be obvious: if control is analyzed as a species of A-movement, then quirky case should be retained on the “moved” DP, just as it is in all other types of A-movement dependencies (raising, ECM, passive).<sup>6</sup> However, this is patently impossible. As Landau (2003) notes, the challenge lies not merely in describing the control facts, but in describing them in a way consistent with the raising facts. Most specifically, the task is to explain why the mechanism that ensures case independence in OC dependencies does not apply in raising chains, which uniformly display case preservation. As we show in the next section, B&H do not meet this challenge.

## 2.2 Case Overwriting: A Nonanswer

B&H address the failure of case preservation in control constructions such as (4b) and (5). The derivation they propose for a control example in all relevant respects identical to (4b) is given here (their (26)–(27), p. 599):

- (6) a. nominative NP . . . [quirky FQ/SP . . . ]  
 b. Jón vonast til [að leiðast ekki einum].  
 JON.NOM hopes for to be.bored not alone.DAT  
 ‘Jon hopes not to be bored alone.’
- (7) NP<sub>i</sub> T<sup>0</sup> . . . t<sub>i</sub> V<sup>0</sup> . . . [T<sub>inf</sub> . . . V<sup>0</sup> [t<sub>i</sub> FQ]]  
 Step 1: embedded V<sup>0</sup> assigns a θ-role/quirky Case to NP and quirky Case to FQ  
 Step 2: matrix V<sup>0</sup> attracts NP and assigns a θ-role to it  
 Step 3: matrix T<sup>0</sup> assigns structural Case to NP, which moves to check EPP

Note that under this analysis, the moved DP is assigned case twice, receiving quirky case in its base position and structural case in (what amounts to) its surface position. B&H’s core proposal is that quirky case on a moving DP is obligatorily overwritten by a structural case assigned at the landing site (or in the higher clause). They state, “As for the Case value that surfaces on the moving element . . . , it is always the highest Case value” and thus, “Case is morphologically realized only once . . . , according to the context in which the NP is pronounced” (pp. 600–601).

This position flatly contradicts the standard analysis of quirky case, as discussed in section 2.1. Indeed, on that view, quirky case is *defined* by its systematic resistance to overwriting. B&H do not mention the case preservation effect. Consequently, it remains unclear how their theory would avoid falsely predicting case overwriting whenever a quirky case-marked DP under-

<sup>6</sup> Nothing hinges on analyzing this class of dependencies as instances of literal movement, as opposed to Agree. There is evidence that Icelandic lacks the classic Extended Projection Principle (construed as obligatory filling of Spec,TP; see Wurmbrand 2006), but the issues here do not distinguish between quirky and structural case-marked DPs. Note that Landau (2000) analyzes OC as an Agree dependency, but crucially, one involving two distinct A-chains. A matrix v/T forms an Agree relation both with the controller DP and with PRO (or the infinitival C). Since the controller DP is never part of the embedded infinitive, it is never c-commanded by the embedded predicate and cannot receive case from it. Thus, case preservation in OC is ruled out on principled grounds in this theory.

goes movement, thereby failing to account for the standard examples that motivate the concept of quirky case.<sup>7</sup>

Within B&H's framework, there are only two possible analyses of quirky case-marked DPs: either they bear a hidden structural case feature that must be checked or they do not.<sup>8</sup> If they do, the structural case feature is valued in the matrix clause, correctly predicting case overwriting in control, but crucially *incorrectly* predicting overwriting in all standard A-movement contexts (as discussed above). If, on the other hand, quirky DPs do not bear any additional (structural) case feature—perhaps because structural case is a Last Resort option—then their quirky case should be preserved through all derivational stages. This is the correct result for A-movement, but not for control, where the lower quirky case never surfaces on the controller. Could B&H then assume that quirky case-marked DPs bear an *optional* structural case feature? No, because such optionality would allow case preservation in control and case overwriting in A-movement—two scenarios that never arise.

As far as we can determine, except by brute stipulation (i.e., presupposing the raising/control distinction to be explained), the MTC has no means of predicting the systematic correlation of case preservation effects with raising (and other A-movement) and their absence from control, precisely as Landau (2003:493) notes.

### 2.3 Case Matching and Independence: Structural Case

When quirky case is not at issue, object control and ECM look similar, with accusative case on the DP corresponding to the (understood) subject of the infinitival clause. However, as noted by ATS (e.g., Thráinsson 1979:361), the two constructions differ markedly in the case properties of elements in the infinitival clause that agree in number, gender, and, crucially, case with their antecedents (SPs, FQs, participles, and adjectival main predicates). The pair in (8) illustrates with an agreeing SP *einn* 'alone'.

- (8) a. Jón        taldi        Bjarna<sub>i</sub>        hafa        hlaupið einan/\*einn<sub>i</sub>.  
 Jon.NOM believed Bjarni.ACC to.have run        alone.ACC/\*NOM  
 'Jon believed Bjarni to have run alone.'  
 (B&H 2006a:601)

<sup>7</sup> B&H state (their fn. 3), "Landau also observes that in contrast to control, raising disallows situations where a single NP appears to receive two Cases. We return to this difference between raising and control in section 3." In fact, however, they do not discuss any of the raising examples presented by Landau (2003:492), culled from the earlier literature, nor any other examples that show the case preservation effects discussed above. The sole example of a raising versus control contrast they discuss in their section 3 concerns a different point, namely, the distribution of structural (nominative) case in the infinitival. We return to these example types below.

<sup>8</sup> As B&H do not address this point, we must cover both options. Note that B&H's derivations (29) and (33) and associated text (pp. 599, 600) are suggestive of a Last Resort view, whereby quirky case is sufficient to satisfy the Case Filter. This would be an unsignaled, but important, departure from assumptions they make in work that they rely on in B&H 2006a, notably, the Inverse Case Filter and the assumption that ECM verbs like *believe* obligatorily assign accusative (see Boeckx 2003:170, Boeckx and Hornstein 2004:436). Assuming that quirky case satisfies the Case Filter will create an even more serious problem regarding the lexicalization of PRO, to which we return in section 4.



- b. *Ég bað hann<sub>i</sub> að fara einn/einan<sub>i</sub> þangað.*  
 I.NOM asked him.ACC to go alone.NOM/ACC there  
 ‘I asked him to go alone.’  
 (Thráinsson 1979:301)

The agreement asymmetry is especially clear with predicate nouns and passive participles, as in (9) (see also (13)).

- (9) a. *Ég tel Maríu hafa verið tekna/\*tekin af lögreglunni.*  
 I.NOM believed Maria.ACC to.have been taken.F.SG.ACC/\*NOM by the.police  
 ‘I believed Maria to have been taken by the police.’  
 b. *Ég bað Maríu að vera tekin/\*tekna af lögreglunni.*  
 I.NOM asked Maria.ACC to be taken.F.SG.NOM/\*ACC by the.police  
 ‘I asked Maria to be taken by the police.’  
 (Thráinsson 1979:362–363)

The question these examples raise for the MTC is why nominative is available in the lower clause in (8b) and (9b) (indeed, obligatory in (9b)), but impossible in (8a) and (9a). Note that both the nominative and accusative forms of the participle show number and gender agreement with *María*; namely, they are not default forms, a fact that will be relevant in section 3.

#### 2.4 Case Dependence: The Clausemate Speculation

B&H address a contrast like (8), but they do not note the sharper contrast with participles and nouns. Their derivation of an ECM structure like (8a) is given in (10a) (their (35)) and should be contrasted with object control in (10b) (their (37)).

- (10) a. *ECM*  
 $NP_i v^0 \dots V^0 \dots [T_{inf} \dots V^0 [t_i FQ]]$   
 Step 1: embedded  $V^0$  assigns a  $\theta$ -role to NP  
 Step 2: matrix  $v^0$  assigns structural accusative Case to NP and FQ by multiple Agree  
 Step 3: NP raises to matrix Spec,vP (to check EPP)
- b. *Object control*  
 $NP_i v^0 \dots t'_i V^0 \dots [T_{inf} \dots V^0 [t_i FQ]]$   
 Step 1: embedded  $V^0$  assigns a  $\theta$ -role to NP  
 Step 2: matrix  $V^0$  attracts NP and assigns a  $\theta$ -role to it  
 Step 3: matrix  $v^0$  assigns structural accusative Case to NP and FQ by multiple Agree

The key difference lies in step 2 of (10b). Thus, B&H “speculate that the marked default [*sic*] nominative Case on the floating quantifier in [structures corresponding to (10b)] is a distance effect” (p. 602). Where the two targets of multiple Agree are in the same clause at the point of case assignment (as in (10a)), case sharing is strictly obligatory.

There are at least two significant problems with this approach. The first one is factual. B&H assume, incorrectly, that accusative is always available on agreeing elements in the infinitive

and that only the “marked” nominative in examples like (8b) is in need of explanation. In fact, however, nominative has a wider distribution than accusative and it is strongly, perhaps exclusively, preferred in examples like (9b) (we return to the status of the nominative in the next section).

The second problem is that even for agreeing adjectives, distance (at the point of case assignment) does not appear to be the relevant factor. In particular, Andrews (1982), in discussing the obligatory agreement in ECM and raising configurations, provides examples in which the ECM DP and the agreeing element are in different clauses, as in (11).

- (11) Þeir telja hana (vera) sagða (vera) vinsæla/\*vinsæl.  
 they believe her.ACC to.be said.ACC to.be popular.ACC/\*NOM  
 ‘They believe her to be said to be popular.’  
 (after Andrews 1982:445)

On B&H’s assumptions, the *v* associated with ECM verbs such as *segja* ‘say’ has an EPP feature (step 3 of (10a)). If this feature is retained under passive (e.g., if passive *vP* is a phase; see Boeckx and Hornstein 2004:437), movement of the DP into the intermediate clause will be forced prior to case assignment by the matrix *v* under multiple Agree. Such long-distance constructions should then pattern with control—but they do not. In fact, whether or not intermediate movement is assumed, there are two elements in (11) agreeing in case with the ECM DP, namely, the passive participle in the intermediate clause and the predicate adjective in the lowest clause. Wherever B&H take the DP to be at the point of case assignment, it is a clausemate with one agreeing element and not the other. Hence, the clausemate condition does not appear to be the relevant determinant for case agreement. Nominative is licensed under object control but not under ECM, even when the ECM DP and the agreeing element are not clausemates. Once again, the MTC fails to distinguish raising from control in well-known examples.

### 3 Nominative PRO: Structural or Default Case?

One aspect of the Icelandic control facts that has received especially prominent attention since Sigurðsson 1991 is the nature of the nominative case that surfaces on (elements agreeing with) PRO. As B&H recognize, identifying this nominative as structural will conclusively establish that the controller and the controllee each bear one structural case and one  $\theta$ -role, and will undermine the MTC. B&H thus repeatedly stress that they treat the nominative in question as “default” rather than structural case. We focus on this question here, noting that B&H do not provide evidence for their position, and reviewing the compelling evidence in the literature for the structural nature of this case.<sup>9</sup>

<sup>9</sup> To avoid potential terminological confusion, we keep to the term *structural* nominative for the nominative that is associated with the subject of a finite clause. B&H’s key claim is that the nominative in infinitives (what they term *default* nominative) is distinct from that nominative. Our point is that this dichotomy is false: the two are not distinct by any criteria. A separate question is whether “structural nominative” is itself (always) a form of default or unmarked case (as in Marantz 1991, McFadden 2007). This latter use of the term *default* is not the one used by B&H, and not the one we dispute.

### 3.1 The “Case” for Default Case

When the embedded predicate is not a quirky case assigner, PRO may take on nominative case (diagnosed by agreement on the SP). According to B&H, this option is marginal. Example (12) is their (14), with their judgments.

- (12) Jón      bað   Bjarna      að koma einan/??einn.  
 Jon.NOM asked Bjarni.ACC to come alone.ACC/??NOM  
 ‘Jon asked Bjarni to come alone.’

B&H write, “Though nominative is marginally possible on the floating quantifier, accusative is strongly preferred. We take this to indicate that in such situations, nominative is really a marked default Case realization” (p. 595). Within their framework, this is significant, since they make it clear that default case can be “factored out” of the picture, being entirely distinct from structural case, which is unavailable to the embedded subject: “we take this nominative on the secondary predicate to be a default Case, as there is no source for structural nominative in the embedded clause” (p. 596).

Once out of the picture, nominative PRO no longer bears on multiple case assignment. Suppose the controller bears case  $\alpha$  and the embedded SP case  $\beta$ . If either  $\alpha$  or  $\beta$  is inherent/quirky, it simply reflects a  $\theta$ -role, not abstract case. If  $\beta$  = nominative, again it is not abstract/structural case, but default case. B&H conclude, “Since we have shown that there is no evidence that multiple structural Cases are assigned to a chain, the argument against a movement theory of control dissolves” (p. 598).

We note that the claim that nominative in Icelandic OC infinitives is a default case rests *entirely* on the alleged markedness of nominative in (12). B&H do not offer any independent support for this claim, which plays a key role in their analysis (see section 4). Indeed, the first quotation above suggests that B&H simply equate markedness and “defaultness.”

### 3.2 The Icelandic Facts

Neither the claim that embedded nominative in OC is a marked option, nor the claim that it is default case, finds support in the extensive literature on Icelandic. There is much evidence against both claims, which we review below. We note in passing, though, that even if the assumption of markedness were granted, the link to the assumption of defaultness would at best be unclear. Default values of morphological features are simply unmarked values that are inserted in the absence of more specific spell-out instructions. To our knowledge, even within B&H’s approach, no markedness in judgment is attached to such choices. It is thus unclear why nominative PRO in (12) should be any more marked than, say, 3rd singular default agreement on the main predicate when no nominative DP occurs (as in B&H’s example (3)).<sup>10</sup>

<sup>10</sup> Embedded “default nominative” case is apparently not marked when the controller bears inherent/quirky case (see B&H’s fn. 6 and (19b)). B&H do not offer any explicit account of this contrast. In section 5, we return to this question and show that the most natural account available under B&H’s assumptions is empirically untenable.

In any event, there is ample evidence that nominative PRO is not marked/marginal in Icelandic; in fact, it is often the preferred option, sometimes the only one. B&H have apparently erred in this respect in using only the SP *einn* ‘alone’ as a case detector in the embedded infinitive. It is well established in the literature, however, that main predicates (MPs) and SPs display different agreement patterns. Importantly, predicate nominals and passive participles *qua* MPs obviously falsify the “markedness” claim, while SPs are simply uninformative with regard to the “defaultness” claim.

Regarding the markedness claim, Andrews (1976:176) noted early on that “a predicate adjective modifying a nominative zero subject can appear either in the nominative or in the case of the controller” (see also Andrews 1982:450). He was also explicit about the preference: “Why is the nominative always possible, rather than some other case, such as the accusative?” (Andrews 1982:451). Indeed, although B&H (fn. 8) cite Andrews 1982 as a precursor to their default nominative proposal, they fail to mention that Andrews raised this idea to account for the *predominance* of nominative in OC infinitives, not its marginality. Indeed, what seemed to Andrews to be a variable, “squishy” phenomenon (which he ultimately relegated to “performance”) was case matching with the controller, not case mismatch.

More to the point, the preference for nominative over case transmission is especially clear with two types of embedded MPs: predicate nominals and passive participles (see Thráinsson 1979:362; also see Andrews 1982:453, citing Friðjónsson 1977). Sigurðsson (2002:712) too observes that “as a matter of fact, case-copying down into the infinitive is marked or questionable for many speakers and even out for some.” The following examples are reported to allow only nominative in the infinitive (Thráinsson 1979:327, 362):<sup>11</sup>

- (13) a. Hann kenndi honum að vera góður skákmaður/\*góðum skákmanni.  
 he taught him.DAT to be good chessplayer.NOM/\*DAT  
 ‘He taught him to be a good chessplayer.’  
 b. Ég bað Maríu að vera tekin/\*tekna af lögreglunni. (= (9b))  
 I asked Maria.ACC to be taken.F.SG.NOM/\*ACC by the.police  
 ‘I asked Maria to be taken by the police.’

As previous scholars have observed, the phenomenon of case transmission in Icelandic exhibits considerable interspeaker variation (similarly in Russian; see Landau, to appear, for extensive documentation). Nonetheless, the empirical picture is far from chaotic, and solid generalizations can be and have been formulated. One such generalization is the availability of nominative in all OC infinitives where quirky case is not assigned. Any analysis of the facts must account for this generalization; an analysis predicated on the false premise that nominative is a marginal option in OC contexts is bound to be off the mark.

<sup>11</sup> Presumably, B&H would not expect dative in (13a), given their claim that “Icelandic speakers . . . strongly reject remote quirky Case matching” (p. 597). This claim, however, is incorrect; in section 5, we show that transmission of inherent/quirky dative/accusative is not generally ruled out. Its failure in (13a) is due to the relative inherent resistance of predicate nominals to case transmission, as evidenced by the parallel failure of accusative transmission in (13b).

Although B&H are wrong in claiming that nominative is marked in OC infinitives, one may still wonder whether they could be right in claiming that it is a default case. After all, as we have noted above, the two claims are independent. The answer again is no: there is no reason to believe that the nominative on the null subject of infinitives—PRO, in our view—is anything other than standard structural case.

Example (13b) serves to illustrate the point. The embedded passive participle *tekin* in this example obligatorily shows agreement (in number, gender, and case) with the (null) subject of the infinitival. The default form *tekið* would be obligatory when the subject does not have structural case. In making this argument, Sigurðsson (1991:335–336) presents the following minimal pair:

- (14) a. Strákarnir vonast til að verða aðstoðaðir/\*aðstoðað.  
 the.boys.NOM hope for to be aided.PL.NOM/\*DFLT  
 ‘The boys hope to be aided.’  
 b. Strákarnir vonast til að verða hjálpað/\*hjálpaðir/\*hjálpuðum.  
 the.boys.NOM hope for to be helped.DFLT/\*PL.NOM/\*PL.DAT  
 ‘The boys hope to be helped.’

In both sentences, the controller in the matrix clause is nominative. The difference lies in the embedded infinitives. Where the infinitive predicate is a quirky case assigner (‘be helped’ assigns dative), the participle is obligatorily in the default, nonagreeing form (14b). Where the infinitive is a predicate whose corresponding finite subject would be nominative, the agreeing, nominative participle is obligatory, and the default form is excluded (14a). As regards MP agreement, then, nominative on PRO patterns with structural case (obligatory agreement) and against quirky/inherent case (agreement impossible).

In fact, as Sigurðsson has repeatedly stressed, with respect to agreement on MPs, the nominative on PRO behaves unlike the other known instances of default nominative in Icelandic, namely, dislocated and vocative DPs. As (15) shows, true default nominative DPs fail to trigger agreement, even on participles.

- (15) Strákurinn, við hann var ekki dansað/\*dansaður.  
 the.boy.NOM with him.ACC was not danced.DFLT/\*M.SG.NOM  
 ‘The boy, nobody danced with him.’  
 (Sigurðsson 1991:338, paraphrase added)

The participial agreement facts are particularly relevant, since, as B&H note, ‘overt morphological agreement on . . . passive past participles (Case, number, gender) *can only take place with elements bearing structural Case*’ (pp. 592–593, emphasis added). Since the passive participle in control complements obligatorily agrees with the null subject of the infinitive as in (13b), it follows—on B&H’s own assumptions—that this nominative is structural case, not default case.

The point here is neither subtle nor new. The facts are discussed by ATS, and this argument against default nominative in control complements is presented in detail by Sigurðsson (1991). Although they cite these works, B&H do not mention the behavior of MPs (adjectives, nouns, or past participles) in infinitives, and their characterization of Sigurðsson 1991 (on p. 593) men-

tions only the examples of agreement with FQs/SPs. A major theme in Sigurðsson 1991, however, as in later work (Sigurðsson 1992, 1996, 2002, 2003, 2004), is precisely this distinction: while primary agreement (on MPs) is triggered only by structurally case-marked subjects, secondary agreement (on FQs/SPs) is case-insensitive, applying also with inherent/quirky case-marked arguments.

Omitting this distinction in effect renders almost all of B&H's examples irrelevant to the question of whether nominative on PRO is structural or default case. The reason is that (as noted above) their examples use only FQs/SPs as case detectors, never MPs. Since FQs/SPs agree with *any* type of antecedent, they cannot be used to choose between the structural and default analyses of the embedded nominative. However, examples with embedded MPs, such as (13a–b) and (14a), can be used in this way; and the fact that they manifest full agreement, in contrast to (14b) and (15), vindicates the standard structural nominative analysis and refutes B&H's default nominative proposal.<sup>12</sup>

We note here that precisely the same argument (for structural case on PRO), using similar case concord paradigms, has been made for Russian (see Comrie 1974, Greenberg 1983, 1989, Neidle 1988, Babby 1998, Babby and Franks 1998, Franks 1998, Landau 2008). Interestingly, Russian provides straightforward evidence that the case of PRO is not default case: while the default case of DPs in Russian is nominative, the case on PRO is dative. Thus, a key idea in the MTC—that PRO may never bear a locally assigned structural case—is consistently disconfirmed in languages that provide the appropriate testing ground for it (see Landau 2008 for further data and discussion).

#### 4 The Lexicalization Problem

Why is it so important for the MTC to banish multiple structural cases in OC chains? Curiously, the question is not addressed in B&H's recent writings. A close reading of the original formulations of the MTC, however, reveals the tacit assumptions that are endangered once structural case is granted to PRO (or the controller's trace). These assumptions are needed to guarantee that controlled subjects are unpronounced; in other words, they bear on the fundamental problem of control theory—how to derive the distribution of PRO. In this section, we show that the irreducible existence of multiple cases in OC chains robs the MTC of its account of the null status of PRO. The result is that the MTC licenses and overgenerates lexical subjects in OC infinitives. We consider three environments where this happens: (a) PRO receives structural nominative, (b) PRO receives quirky case, (c) PRO receives structural accusative (via transmission from the controller).

Hornstein (1999:82) explains the fact that the understood subject of control infinitives is unpronounced as follows: ‘‘the null phonetic status of PRO is explained in whatever way we

<sup>12</sup> In fact, B&H do give two examples in which the embedded MP is an adjective (their (16), with an embedded small clause, and (i) in their fn. 6). In both, the adjective is unambiguously in an agreeing, nominative form and not in the default form that would be required under their analysis (B&H do not gloss agreement on the adjectives). The agreement patterns in these examples provide further evidence that there is a structural nominative DP in the infinitive, controlling agreement on the adjective, as noted in the source literature.

explain the null phonetic status of NP-trace. One natural assumption is that Case is required for phonetic ‘visibility.’ Both NP-trace and PRO will therefore fail to meet the requirements for having phonetic content.’ Hornstein (2003:fn. 29) reiterates this parallelism as the source of the ‘nullness’ of PRO, ultimately deriving it from Nunes’s (1995) theory of copy deletion. B&H express their continued reliance on Nunes’s proposals as well (p. 600). In fact, Nunes’s theory is really a sophisticated expansion of case theory. It predicts that a single copy will be spelled out in an A-chain, and this copy will occur in the case position (normally, the topmost copy).<sup>13</sup>

On these assumptions, the facts established in section 3 are lethal to the MTC, for they show quite clearly that PRO bears structural case in Icelandic. That is, in normal circumstances, where no quirky case is involved, the OC chain is structurally case-marked twice—both at the tail (PRO) and at the head (the controller DP). It is therefore expected that the tail position should be able to host a phonetically visible DP. This DP would receive its  $\theta$ -role and structural nominative in the lower clause, while the matrix DP would receive its own  $\theta$ -role and case in the matrix clause.

- (16) a. \*Jón vonast til [hann/Eiríkur að verða ráðinn].  
 JON.NOM hopes for he/Eric.NOM to be hired.M.SG.NOM  
 ‘Jon hopes for him(self)/Eric to be hired.’  
 (Jónsson 1996:162)
- b. Ég bað Maríu [að (\*hún/\*Ásta) fara ein þangað].  
 I asked María.ACC to \*she/\*Asta.NOM go alone.F.SG.NOM there  
 ‘I asked Maria (for her/Asta) to go there alone.’  
 (after Thráinsson 1979:301)

Such sentences are ungrammatical in Icelandic or, for that matter, most languages that have been investigated (see Szabolcsi 2007 for apparent examples of overt infinitival subjects). Yet the MTC inevitably overgenerates them, particularly in Icelandic, given its commitment to the role of case in copy pronunciation and given the empirical finding that Icelandic PRO bears structural case. This is what we call the *lexicalization* problem: how to block the lexicalization of PRO?

It is important to understand that although the MTC can accommodate a lexical PRO (i.e., overt subject of an infinitive) as such, it cannot accommodate *both* a lexical PRO and a lexical ‘controller.’ Thus, the backward control construction has been taken as evidence that the MTC is consistent with lexicalization of PRO (Polinsky and Potsdam 2002, 2003). However, the problem of *double* lexicalization, of both controller and PRO, arises with equal force under the movement analysis of backward control (see Landau 2007 for relevant comments). The question for the

<sup>13</sup> Nunes assumes that (a) Case must be checked locally (in a specifier-head relation), (b) each copy in a chain carries its own uninterpretable Case feature, and (c) PF deletion only eliminates the ‘offending’ Case features of the deleted copy. These assumptions conspire to ensure that PF deletion of low copies in an A-chain will always be more economical than PF deletion of the highest copy, since the latter’s Case is necessarily checked by the attracting head, whereas the former’s Case, if not deleted at PF, would require an extra deletion operation in the syntax. Thus, high pronunciation is the default option in A-chains.



MTC boils down to this: why must there be a single chain at all, as opposed to two independent chains? What rules out (16a–b)?<sup>14</sup>

It should be recognized how fundamental to the MTC the lexicalization problem is. For any theory of control, the distribution of PRO is the core problem. From its inception, the ostensibly elegant solution in terms of case and copy pronunciation has been alleged to be the core achievement of the MTC. But the “elegant” solution, it now transpires, rests on a false premise—that PRO is caseless. Robbed of that premise, the MTC can no longer explain the fundamental fact of OC.<sup>15</sup>

The lexicalization problem arises with equal force in the two other control environments treated by B&H: quirky PRO and accusative PRO (via transmission). Unsurprisingly, neither can be lexicalized.

- (17) a. Ég vonast til [að (\*mér/\*Jóni) verða hjálpað].  
 I.NOM hope for to \*me/\*Jon.DAT be helped  
 ‘I hoped (for myself/Jon) to be helped.’  
 (after Zaenen, Maling, and Thráinsson 1985:457)
- b. Ég bað Maríu [að (\*hana/\*Bjarna) fara þangað].  
 I asked Maria.ACC to \*her/\*Bjarni.ACC go there  
 ‘I asked Maria (for her/Bjarni) to go there.’  
 (after Thráinsson 1979:301)

Concerning (17a), the problem is that B&H apparently take quirky case to be sufficient for the purposes of licensing a lexical DP.<sup>16</sup> Having both case and a  $\theta$ -role, then, the DP in the lower clause in (17a) would have no intrinsic need to move further, and a second DP could undergo external Merge in the matrix clause, where it would certainly receive a  $\theta$ -role and structural case. If, on the other hand, quirky case does not suffice for licensing an overt DP (as in classic GB), then the case preservation problem reappears in the A-movement contexts, as discussed in section 2.1. There are only two choices here. Both fail, for reasons that were well documented in the literature prior to B&H 2006a, and which B&H fail to address.

<sup>14</sup> Incidentally, we note that even if nominative in the infinitive is default case, it is not clear that B&H’s assumptions suffice to prevent PRO from being lexicalized with that case. B&H assume that default nominative is assigned directly to the embedded SP (their derivations (33) and (37)) and not to the controller’s chain. The question is what prevents it from being assigned to the embedded subject.

<sup>15</sup> A reviewer suggests that Nunes’s (1995) theory would exclude double lexicalization because of the requirement, based on the Linear Correspondence Axiom, that each chain be lexicalized exactly once. Our point here is that recognizing structural nominative in the lower position in fact obviates the need for an OC chain at all under B&H’s assumptions. The matrix and embedded DPs each have a  $\theta$ -role and structural case, so nothing excludes two chains and thus two lexicalized positions, at best related by binding. Recall that the MTC purports to derive the obligatory coreference in OC from movement—the assumption that there is necessarily only one DP (itself reduced to case requirements). Thus, once structural nominative is recognized in the embedded clause (as it must be), the MTC loses both its account of the “nullness” of OC PRO and of its necessary anaphoricity, the two central problems for control theory.

<sup>16</sup> For example, the quirky DP in their (33) undergoes no feature checking with the finite T, other than checking of an EPP feature.



Finally, (17b) is also overgenerated, given the mechanism of multiple Agree that B&H invoke to derive object control (see (10b)). Instead of moving the embedded DP to the matrix VP, one can externally merge a new DP to receive the matrix  $\theta$ -role. Both DPs would check their case against the matrix light  $v$  (via multiple Agree). As far as we can see, nothing in B&H's system rules out this derivation.

To summarize, we have identified a fundamental problem for the MTC, arising when its case-based analysis of lexicalization encounters the facts of Icelandic. In three distinct environments (nominative, quirky, and accusative PRO), the MTC wrongly licenses lexical subjects in OC infinitives.<sup>17</sup> One must conclude that the MTC has no satisfactory account of the basic issue in control theory—how to derive the distribution of PRO. Evidently, a viable theory of OC must dissociate the distribution of PRO from case. Theories with this property exist (Sigurðsson 1991, Carnie and Harley 1997, Tallerman 1998, Landau 2004, 2006, San-Martin 2004), but they are all fundamentally incompatible with the MTC's core assumptions.<sup>18</sup>

## 5 Case Transmission

So far, we have been concerned with instances where the controller bears structural (nominative or accusative) case and optionally transmits it to PRO. We have said nothing about the behavior of controllers with inherent/quirky (I/Q) case. There are three situations to consider: a quirky controller occurs (a) with a nominative PRO, (b) with a quirky PRO, which is assigned case locally, or (c) with a quirky PRO, case-marked by transmission. The first situation corresponds to B&H's "default nominative," a notion we argued against in section 3. The second situation, in which PRO receives a quirky case independent of the quirky case of the controller, is also mentioned by B&H (e.g., their (9), (20)). As B&H identify I/Q case with  $\theta$ -role (they often use the expression  *$\theta$ -role/quirky Case*), for them such configurations reflect nothing more than the simple fact that OC chains are assigned two  $\theta$ -roles.

What about the last possibility, where the controller transmits its quirky case to PRO? According to B&H, this situation does not occur. They claim that "Icelandic speakers . . . strongly reject remote quirky Case matching" (p. 597), this being predicted by the MTC, as "inherent (in our case, quirky) Case cannot be assigned long-distance" (p. 602). They further cite two examples (their (19a–b)) where they report Q-case transmission to be ungrammatical.

<sup>17</sup> We have no doubt that technical solutions can be devised. The issue is, and always has been with regard to the empirical problems facing the MTC, what insights are lost or gained by introducing such solutions. In the case at hand, it seems that the MTC has missed a crucial insight: the null status of PRO is not a side effect of certain parochial assumptions about case; rather, it is a fundamental, crosslinguistically valid property of OC.

<sup>18</sup> B&H do seem to recognize the problem for a case-based account of PRO, as in a separate article they appear to retreat from their earlier position, invoking a notion of "maximal checking" in place of case (Boeckx and Hornstein 2006b:124). However, this appears to be a notational variant of the GB notion of abstract case. At any rate, B&H themselves reveal how heavily the MTC relies on PRO lacking structural case when they state, "Since we have shown that there is no evidence that multiple structural Cases are assigned to a chain, the argument against a movement theory of control dissolves" (p. 598). Thus, with respect to the Icelandic data in particular, the majority of B&H's discussion is about case—to the extent that their account is translatable into "maximal checking," the core problems remain.

In contrast, though, all major studies of case transmission in Icelandic, starting with the earliest, cite grammatical examples where an I/Q case assigned locally to the matrix controller is inherited in the infinitive (alternating with nominative). Such examples are found both with quirky subject controllers (18) and with dative object controllers (19), and the embedded case-bearing element may be either an adjectival MP or an SP (Andrews 1976:exx.(31)–(33), 1982:exx.(38), (40); Thráinsson 1979:299ex.(47), 301ex.(50), 363ex.(41); Sigurðsson 2002:exx.(83), (84), (86); the following is a sample from these sources).

- (18) a. Mig langar að fara í kaupstaðinn einn/einan.  
I.ACC long to go to town alone.NOM/ACC  
'I long to go to town alone.'
- b. Henni fannst gaman að verða fyrst/fyrstri.  
her.DAT found fun to be first.NOM/DAT  
'She found it fun to be number one.'
- (19) a. María leyfði þeim að vera óþægir/óþægum.  
Maria allowed them.DAT to be naughty.NOM/DAT  
'Maria allowed them to be naughty.'
- b. Ég skipaði henni að fara ekki þangað ein/einni.  
I ordered her.DAT to go not there alone.NOM/DAT  
'I ordered her not to go there alone.'

While authors do note that many speakers prefer nominative in these contexts, no study (prior to B&H 2006a) has indicated that I/Q case transmission is ungrammatical in Icelandic. Similar facts obtain in Ancient Greek and Latin (Andrews 1971, Quicoli 1982, Cecchetto and Oniga 2004). Yet B&H do not address this mass of evidence. Consider now the implications of I/Q case transmission for the MTC. At the very least, the phenomenon demonstrates that I/Q case cannot be *identical* (equivalent, reducible, etc.) to a  $\theta$ -role. Whereas the matrix I/Q case can be transmitted to PRO, the matrix  $\theta$ -role cannot. Presumably, B&H prohibit long-distance assignment of I/Q case since long-distance assignment of  $\theta$ -roles is unattested. However, facts such as those in (18)–(19) break this alleged causal link.<sup>19</sup>

<sup>19</sup> A deeper puzzle for the MTC lurks underneath: *why* can  $\theta$ -roles not be assigned long-distance? Given (a) the MTC's reduction of  $\theta$ -assignment to feature checking, and (b) the operation Agree, which allows for long-distance feature checking, it is no longer clear what blocks this option. A language choosing this option would allow controller DPs to scopally reconstruct into the infinitive—so far an unattested phenomenon.

Notice that backward control (Polinsky and Potsdam 2002, 2003) is not an instance of  $\theta$ -checking under Agree (without Merge), but an instance of  $\theta$ -checking under movement plus low copy pronunciation (so-called LF movement). Thus, as Polinsky and Potsdam show, the covert controller may bind matrix anaphors. Genuine long-distance  $\theta$ -checking, in contrast, should not endow an embedded DP with matrix scope (cf. the frozen scope of the associate in *there*-constructions).

It appears that natural languages always implement  $\theta$ -assignment in strictly local configurations. Standard semantic theories provide a principled explanation for this design feature (argument saturation being accomplished via binary operations defined for sisters only—e.g., Function Application). Part of the obscurity surrounding the predictions and consequences of positing multiple  $\theta$ -roles per chain in the MTC derives from the absence of an attendant compositional semantics.

A less apparent but more significant implication concerns the status of the embedded nominative. Recall that when the controller receives structural accusative, case transmission, if possible at all, alternates with embedded nominative (see (8b)). B&H take the latter to be a marked option (against all previous descriptions). Notably, under an I/Q case-marked controller, the embedded nominative is *not* marked, even on B&H's own description (see their (8), (19b), and (i) in fn. 6). Why this contrast? B&H do not offer any explicit explanation, but we can extrapolate the following from their assumptions: nominative is marked under an accusative controller precisely because accusative transmission is available as a first option for valuing the case feature of the embedded FQ/SP (via multiple Agree), while nominative is unmarked under an I/Q controller since it is the only option, transmission of I/Q case being excluded.

Unfortunately for this reasoning, the latter assumption is false, as (18)–(19) demonstrate. Thus, case transmission does not distinguish structural from nonstructural cases. Therefore, on B&H's assumptions, default nominative should be secondary to a transmitted dative, just as it is to a transmitted accusative. The fact that default nominative “wins out” in the first case but not in the second remains an unexplained asymmetry in the MTC.

At this point, on B&H's assumptions one could presumably concede that nominative on (nonquirky) PRO is not “marked.” This, we have argued, corresponds to the actual facts in Icelandic. The problem is that anyone acknowledging the facts would be forced to recognize that nominative is standardly available to nonfinite subjects, just as it is to finite subjects. Herein lies the lexicalization problem that haunts the MTC (see section 4.1).<sup>20</sup>

## 6 Conclusion

In one sense, the case agreement facts of Icelandic (and Russian) constitute just one type of unanswered empirical challenge to the MTC. Many others, not discussed in this reply, still persist (e.g., overgeneration in sideward movement, lack of an account for partial control, violations of Visser's Generalization; see Landau 2007 for extensive discussion).

In another sense, though, the failures of the MTC discussed in this reply deserve a dedicated critique. The basic contrast between raising and control in Icelandic—case preservation in the former, case independence in the latter—has been understood, from the outset, as attesting to the fundamentally different nature of the two processes. Andrews, Thráinsson, and Sigurðsson—although adopting different frameworks—have clearly perceived and articulated this point. The argument has been a mainstay of the discussion for 30 years now and is to be counted among the important results of the field. We hope that by reviewing the literature and bringing together the relevant examples, we have helped to clarify just why this evidence is so compelling.

To be sure, challenges to established results are welcome. As we have demonstrated, though, B&H do not provide a challenge to these conclusions, inasmuch as they do not address the main empirical arguments for the existence of PRO. They offer a “case overwriting” mechanism that

<sup>20</sup> Although it is not our purpose here to provide a full account of case transmission, it is worth noting that such an account is readily available within nonmovement approaches to OC (see Landau 2008 for an analysis that extends to many languages beyond Icelandic).

appears to fail in raising (or any other A-movement) contexts. Likewise, their discussion of nominative case in control infinitives is inconsistent with the facts as reported in all previous studies of the topic. This nominative exhibits the hallmark of standard structural case: it triggers full agreement on MPs. Not only is it not marked (as B&H claim)—it is often the only option available. B&H's exclusive focus on the case marking of FQs/SPs, as opposed to MPs, is a crucial oversight; it renders their data irrelevant to their "defaultness" claim.

The classic literature on Icelandic drew one firm conclusion from the fact that PRO bears case: case cannot distinguish the distribution of lexical DPs from that of PRO. The same conclusion has been reached by scholars studying parallel phenomena in Russian. As far as we can see, this conclusion is inescapable. It is a striking feature of the MTC that for all its claims of breaking with unsubstantiated assumptions of the past, it is intimately predicated on the GB-style Case Filter (reformulated as a theory of the PF interface, but essentially nondistinct in predictions). Evidence that the subject of OC infinitives is case-marked like any other DP, therefore, is lethal to the MTC, as there is no longer any reason why this subject could not be an overt DP, and hence uncontrolled. B&H appear to acknowledge this when they state, "Since we have shown that there is no evidence that multiple structural Cases are assigned to a chain, the argument against a movement theory of control dissolves" (p. 598). Such a claim clearly implies that multiple structural cases—which we have shown to exist—constitute a solid argument against the MTC. Since the MTC's key offering is that it reduces the requirement that PRO be silent to the fact that traces are (typically) unpronounced, the lexicalization problem lies at the very heart of the MTC.

With reference to the Icelandic case facts, and their import for theories of control, B&H note that "it pays to look before one leaps" (p. 592). On this point, we fully concur.

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## Structural Adjacency and the Typology of Interrogative Interpretations

Vera Gribanova

I point out that the generally accepted theory of single-pair versus pair-list readings for multiple *wh*-questions in the Slavic family, as instantiated in Bošković 2001a, predicts the wrong result for Russian multiple *wh*-questions and for coordinated multiple *wh*-questions in several languages. I suggest a reformulation of the connection between the structure and the interpretation of multiple *wh*-questions that relies on the structural adjacency of two or more *wh*-items at LF, and I discuss a number of cases in which this reformulation appears to make the right predictions for multiple *wh*-questions containing clitics.

*Keywords:* multiple *wh*-questions, pair-list reading, single-pair reading, quantifier absorption, coordination

### 1 Introduction

Current work on the typology of multiple *wh*-fronting languages (e.g., Bošković 2001a, 2002) has been directed toward establishing a theoretical connection between the interpretive options available for a multiple *wh*-question and its syntactic structure. Roughly, the typological claim has been that multiple *wh*-fronting languages pattern in two distinct ways, structurally; one pattern coincides with a pair-list reading and the other with both a pair-list and a single-pair reading. Two separate strands of research—those of Grebenyova (2004) and Kazenin (2002)—concentrate on multiple *wh*-fronting data from Russian that seem to be at odds with the typological observation made in Bošković 2001a, 2002. While the theoretical drive to connect the available semantic readings with the available syntactic structures for multiple questions is fitting, it appears that the current formulation of this connection misses crucial evidence from a number of languages, including Czech, Hungarian, Romanian, Russian, and Serbo-Croatian.

The empirical focus of this article is an underexplored type of multiple *wh*-question: the *coordinated multiple wh-question* (henceforth CMW), instantiated by the Russian example in (1). The CMW appears to differ minimally from a typical multiple *wh*-question (i.e., (2)); but upon closer examination, there turn out to be substantial differences, interpretive and structural, between the two types.

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- (1) Kto *i* kakoj gorod zaxvatil?  
 who.NOM *and* which.ACC city.ACC conquered.3SG  
 ‘Who conquered which city?’
- (2) Kto kakoj gorod zaxvatil?  
 who.NOM which.ACC city.ACC conquered.3SG  
 ‘Who conquered which city?’

Building on the Russian data, I attempt to reformulate the connection between the structure and interpretation of multiple *wh*-questions for languages in the Slavic family, Hungarian, and Romanian. Advancing toward this goal involves investigating the interpretation of the CMW construction: the main empirical claim (following Kazenin (2002), among others) is that there is a salient difference between the interpretation of the CMW and the interpretation of standard multiple *wh*-questions in Russian. In discussing questions of the CMW type, the theoretical goal will be to integrate this subtype into our existing understanding of the interpretation of multiple *wh*-questions. After a brief prelude (section 2), I argue that the currently dominant theory, developed in Bošković 2001a, cannot account for the relevant facts in Russian (sections 3.1 and 3.2). I further propose that the distinction between single-pair and pair-list readings can be linked to the presence or absence of a particular structural configuration at LF (section 3.3). The overarching aim of section 3.3 is to explicate the relation between the syntactic structure of a multiple *wh*-question (for each multiple *wh*-fronting language type) and the mechanism by which it can be interpreted. I propose that the distinction between single-pair and pair-list readings can be linked to the presence or absence of a particular structural configuration at LF (section 3.3.1). In section 3.3.2, I discuss the implications and empirical predictions of the newly proposed view, citing several cases in which these predictions are borne out; and in section 4, I discuss the consequences of the present findings for future research.

## 2 Prelude

### 2.1 Empirical Prelude

Before moving to a theoretical discussion of the CMW, I set out the core empirical properties of the construction. *Wh*-phrases in Russian multiple questions can, in principle, appear adjacent to a coordinator either preverbally (as in (3)) or postverbally (as in (4)).

- (3) Čto *i* kogda oni podarili?  
 what.ACC *and* when they.NOM gave.3PL  
 ‘What did they give, and when?’ (CMW construction)
- (4) Čto oni podarili, *i* kogda?  
 what.ACC they.NOM gave.3PL *and* when  
 ‘What did they give, and when?’ (not the CMW construction)

In this article, I will be concerned only with cases like (3), which I call here the CMW. For reasons made clear in Kazenin 2002, examples like (4) have a different structure (whose properties



are discussed extensively in Merchant 2001), and they are therefore not the principal focus of the present discussion.

A few syntactic properties of the CMW deserve mention here. First, any number of *wh*-items (two or greater) can be coordinated. This article will focus primarily on coordination of only two *wh*-items, but the ideas developed here should extend to examples like (5).

- (5) Kto, kogo, kogda i začem priglasil?  
 who.NOM whom.ACC when and for.what invited.3SG  
 ‘Who invited whom, when, and for what?’

Second, any sort of *wh*-item, and any combination of *wh*-items, can be coordinated. This includes arguments, adjuncts, and larger *wh*-phrases. Examples (6a) and (6b) show that two argument *wh*-items can be conjoined. Argument coordination can only occur with transitive verbs (6c), suggesting that the *wh*-items probably originate in argument positions, moving to the left edge of the clause at a later point in the derivation. Notice that one of the arguments in (6a) is also a larger *wh*-phrase, of the form ‘[which *x*]’.

- (6) a. Kto i kakoj gorod zaxvatil?  
 who.NOM and which.ACC city.ACC conquered.3SG  
 ‘Who conquered which city?’  
 b. Kto i čto zaxvatil?  
 who.NOM and what.ACC grabbed.3SG  
 ‘Who grabbed what?’  
 c. \*Kto i čto spal?  
 who.NOM and what.ACC slept.3SG

Coordination of adjuncts is also permitted (7), as is coordination of arguments with adjuncts (8).

- (7) Gde i kogda vy vstretilis’?  
 where and when you.NOM.PL met.2PL  
 ‘Where and when did you meet?’  
 (8) Kto i gde budet spat’?  
 who.NOM and where will.3SG sleep.INF  
 ‘Who will sleep where?’

A third property of the Russian CMW is that no ordering restriction appears to hold between the two conjuncts.<sup>1</sup> Thus, we can switch the order of the conjuncts in (6b), (7), and (8) without any change in grammaticality.

<sup>1</sup> This property may be a direct consequence of the fact that no ordering restriction exists in Russian for noncoordinated multiple *wh*-questions. If the ordering facts for the CMW and parallel noncoordinated multiple *wh*-questions are found to be identical in other languages as well, this result would lend support to the assumption that the CMW is built syntactically in a manner that is analogous to the derivation for noncoordinated multiple *wh*-questions.

- (9) Čto i kto zaxvatil?  
 what.ACC and who.NOM grabbed.3SG  
 ‘Who grabbed what?’
- (10) Kogda i gde vy vstretilis’?  
 when and where you.NOM.PL met.2PL  
 ‘When and where did you meet?’
- (11) Gde i kto budet spat’?  
 where and who.NOM will.3SG sleep.INF  
 ‘Who will sleep (and) where?’

The judgments recorded above may vary across speakers, which is not uncommon in the realm of ordering restrictions (one need only check the abundant literature on superiority effects in English to get a sense of how variable judgments are). However, preliminary corpus searches show that orderings like the ones reported here are used frequently.<sup>2</sup>

## 2.2 Theoretical Prelude

The discussion of the CMW construction in later sections of this article takes two points as established. The first point is that the CMW is actually an instance of coordination of two XPs at the left periphery of the clause. This is not necessarily the default assumption, since a different approach has been proposed by Camacho (2003). Camacho suggests that structures analogous to the CMW might be considered coordination of two CPs plus subsequent backward sluicing within the left-hand CP. The backward sluicing approach is also proposed by Giannakidou and Merchant (1998) for certain Greek and English constructions.

The discussion here will take the view that the CMW construction does not in fact involve backward sluicing. Arguments supporting this view have been made by Kazenin (2002) and Lipták (2003). These authors note that a backward sluicing analysis would yield the structure in (12) for cases of argument-argument coordination.

- (12) [<sub>CP</sub> kto<sub>i</sub> [<sub>IP</sub> t<sub>i</sub> zaxvatil ~~pro<sub>i</sub>~~]] i [<sub>CP</sub>[kako<sub>j</sub> gorod]<sub>t</sub> [<sub>IP</sub> pro<sub>i</sub> zaxvatil t<sub>t</sub>]]

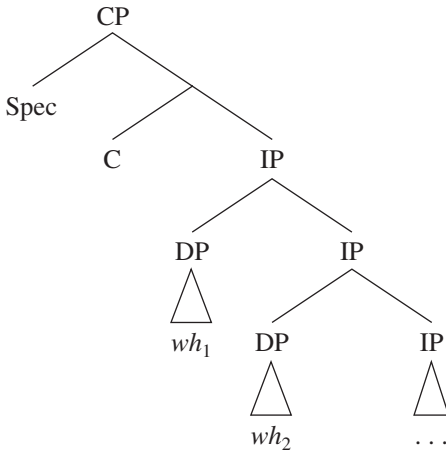
Following Chung, Ladusaw, and McCloskey’s (1995) view of sluicing for (12), we are forced to postulate the presence of an empty pronominal in the object position of the first IP, in correspondence with the verb’s thematic requirements. This structure results in a cataphoric dependency between the *wh*-phrase *kako<sub>j</sub> gorod* ‘which city’ and the pronominal in the first IP. Cataphoric dependencies in Russian are known to be restricted, even for overt pronominals, and especially when the antecedent is a *wh*-phrase. Kazenin’s claim is that there is no satisfactory way to license structures like (12). Another objection against the backward sluicing analysis, raised by a reviewer, is that (12) violates the Backwards Anaphora Constraint (Langacker 1966), which prohibits back-

<sup>2</sup> Searches were executed through the National Corpus of the Russian Language, which is located at <http://www.ruscopora.ru/search-main.html>.

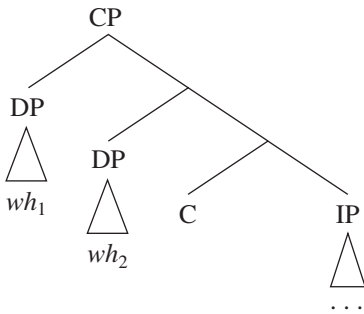
ward but not structurally subordinate anaphora. In the anaphoric relation between *kakoj gorod* and the pronominal in the first IP, the pronominal is not subordinate to its antecedent, so the structure is not licensed.

Given these arguments against the backward sluicing analysis of the CMW, I will view the construction in a way that maximizes its parallelism with more typical cases of multiple *wh*-movement. To situate this effort in a larger context, I provide a brief overview of the traditional approach to multiple *wh*-questions. Since at least Rudin 1988, multiple *wh*-fronting languages have been analyzed as falling into two groups, with differing syntactic structures. In (13) and (14), I adopt the two structural options proposed in Richards 2001, with a minor terminological change.

(13) *IP-fronting: Russian, Polish, Czech, Serbo-Croatian*



(14) *CP-fronting: Bulgarian, Romanian*



Recent views of the structural distinction between CP-fronting and IP-fronting (i.e., Bošković 2001a, 2002) have posited that only CP-fronting is movement to the specifier of CP. IP-fronting has been taken to be IP-internal focus movement (Stepanov 1998). Various pieces of evidence support this distinction, including evidence from superiority effects, *wh*-extraction, and island effects. For example, CP-fronting makes use of multiple specifiers; it is not surprising, then, that

CP-fronting languages allow extraction of multiple *wh*-items from embedded clauses and show no sensitivity to *wh*-island effects. In contrast, IP-fronting languages typically do show sensitivity to island effects and do not allow extraction of multiple *wh*-items from embedded clauses, as only one specifier is available as an escape hatch to the upper clause. Finally, the CP-fronting languages exhibit ordering restrictions with respect to multiple *wh*-items, while the IP-fronting languages generally do not. It is traditionally assumed that this difference is captured structurally by the distinction between fronting to multiple specifiers (CP-fronting) and fronting to multiple adjunction sites (IP-fronting); the latter can presumably occur in any order. It is still an open question why these ordering restrictions occur only for specifiers, if this is the relevant distinction. Ideally, this fact should follow from a difference between specifiers and adjuncts; one attempt to flesh out this idea can be found in Richards 2001.

Extending the *wh*-movement parallel to the analysis of the CMW, I assume that whatever feature or combination of features motivates typical *wh*-movement likewise motivates movement of each *wh*-item in the CMW construction to the left periphery of the clause. Because coordination of arguments is one of the configurations the CMW allows, I will assume that all *wh*-items (including arguments) are generated in their normal base positions and later adjoin to IP, where *wh*-items typically land in Russian.<sup>3</sup> On this view, a language is predicted to license the CMW construction only if it also licenses multiple *wh*-movement to the left periphery of the clause. It follows from this assumption that English should not allow instances of the CMW construction with argument *wh*-phrases, since it prohibits noncoordinated instances of multiple *wh*-movement.<sup>4</sup> It should also follow from this assumption that even within a language like Russian, which makes free use of the CMW, not all phrases can conjoin at the left edge. This construction appears limited to the conjunction of quantifiers that can already appear concatenated at the left edge of the clause without the coordinator.<sup>5</sup>

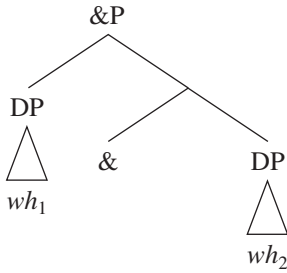
The second starting point concerns the internal structure of the coordinated constituent that appears at the left edge of the matrix clause in Russian. Though other options may be possible, I assume that the coordinated constituent in question has the structure formulated in Zoerner 1995 and shown in (15).<sup>6</sup> Here, the coordinated elements appear in the specifier and complement of the head &.

<sup>3</sup> Kazenin (2002) assumes that the coordinated *wh*-items in CMW constructions are located in the specifier of CP, but *wh*-movement in general is thought to be IP-internal in Russian (Stepanov 1998). To maintain consistency with this observation, I will assume that the coordinated *wh*-items are adjuncts to IP.

<sup>4</sup> A reviewer notes that examples cited by Merchant (2001:111) indicate that Turkish, though not a multiple *wh*-fronting language, also makes use of what looks like a CMW construction. Without further investigating the properties of this construction, it is difficult to conclude anything specific. However, if this really is a CMW construction, then the very interesting question of what permits it to exist in a language without multiple *wh*-fronting naturally arises.

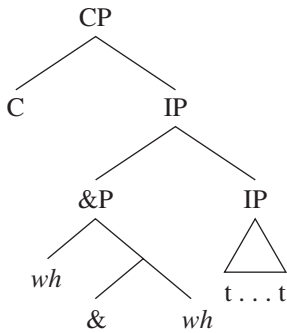
<sup>5</sup> Other non-*wh* elements can naturally also be coordinated—for example, negative quantifiers (e.g., *Ja ničego i nikomu ne skazal* ‘I didn’t say anything to anyone (lit. I.NOM nothing.ACC and no.one.DAT NEG said.3SG)’), as discussed by Kazenin (2002) and Lipták (2003). These same quantifiers can also be concatenated at the left edge in Russian, much like *wh*-phrases. While these patterns suggest that *wh*-movement might be a subtype of a more general type of movement to the left edge, we need a better understanding of the empirical properties of the other quantifier coordination cases before we can conclude that this is indeed the same construction.

<sup>6</sup> Munn (1993) has also developed a structure for coordination, in which the second conjunct, BP (Boolean Phrase), is right-adjoined to the first DP conjunct. While I assume the structure in (15) in my discussion, assuming the structure proposed by Munn would not change the proposal significantly.

(15) *Zoerner 1995: &P*

Given these assumptions, we might assume a structure like (16) for the CMW in IP-fronting languages.

(16)



We might also posit a similar-looking structure for the CP-fronting languages, with the &P constituent in the specifier position of CP. Given the discussion of the CMW thus far, the structure in (16) seems like the most straightforward one to assume. For the purposes of the analysis that follows, the required assumption is that the syntax can produce such a structure, though many difficult questions arise about what kind of derivation could do so. By assumption, & would be merged as the derivation progresses, in conjunction with movement of each *wh*-phrase to the left periphery. Further syntactic exploration may naturally lead to a different syntax for the CMW, but for the moment, the structure in (16) seems like a reasonable point of departure.

### 3 Multiple *Wh*-Questions at LF

#### 3.1 Empirical Observations

Given this much, a natural next step would be to ask how the syntax of the CMW corresponds to its interpretation. Detailed examination of a prominent previous analysis of the semantics of multiple *wh*-questions reveals that the typically accepted account makes incorrect predictions for the CMW construction. Section 3.3 will be concerned with describing a structural and typological observation that might lead to a better understanding.

Primarily, I will be concerned with explaining the interpretive difference between single-pair (SP) and pair-list (PL) readings of questions. The simplest way to demonstrate the difference

between these two readings is to make up scenarios that force one of them (the ones in (17) and (18) are from Grebenyova 2004:169–170).

(17) *Pair-list scenario*

John is at a formal dinner where there are diplomats and journalists. Each journalist was invited by a different diplomat. To find out the details, John asks, ‘‘Who invited whom to the dinner?’’

*Answer:* Mr. Smith invited Mr. Jones, Ms. Black invited Mr. Green, etc.

(18) *Single-pair scenario*

John knows that a very important diplomat invited a famous journalist to a private dinner. To find out the details, John asks, ‘‘Which diplomat invited which journalist to the dinner?’’

*Answer:* Ms. Black invited Mr. Smith.

Semantic intuitions in this area can be difficult to capture. The scenarios presented in (17) and (18) are meant to force a particular interpretation; if the multiple *wh*-question can be asked felicitously given the context provided, it can be concluded that the reading is available.<sup>7</sup> The readings in (17) and (18) are not identically available for multiple *wh*-questions crosslinguistically. English, for example, appears to favor a pair-list reading, the reading in (18) being an exceptional case in which we force the single-pair interpretation by using phrases built around the determiner *which* and perhaps via the use of a special intonation (see section 4 for more comments on one possible explanation for these kinds of readings in English).<sup>8</sup> Serbo-Croatian unexceptionally allows both readings (Bošković 2002); Bulgarian allows only the pair-list reading (Bošković 2001a). Typologically, the pair-list reading appears to be more uniformly available; the question is whether or not the single-pair reading is also available for plain multiple *wh*-questions in a given language.

In section 2.2, it was established that clause-peripheral multiple *wh*-questions divide structurally into two groups. Serbo-Croatian, Russian, Polish, and Czech fall into the IP-fronting group, while Bulgarian and Romanian fall into the CP-fronting group. Bošković (2001a, 2002) develops

<sup>7</sup> A reviewer points out that we can ask a question with the expectation of a pair-list answer, but in certain cases the respondent may give us only one pair. Consider this scenario. Matthew hosts a potluck dinner. His sister arrives late. After the dinner, she helps Matthew clean up in the kitchen and asks him, ‘‘So, who brought what?’’ It happens that only one guest, Bill, brought anything. Matthew answers, ‘‘Well, Bill brought chips.’’ It is not entirely clear how we might characterize such a response, but it is clear that there is something special (indeed, unexpected) about the single-pair response in such cases.

<sup>8</sup> A reviewer raises the concern that English and Serbo-Croatian—which is reported by Bošković (2001a, 2002) to regularly allow single-pair readings—might really be in the same category. Here, I treat single-pair readings for English multiple *wh*-questions as exceptional, while assuming that the two readings are equally available for Serbo-Croatian multiple *wh*-questions. This is in part because Bošković’s body of work on Serbo-Croatian multiple *wh*-questions never mentions the need for special conditions to yield the single-pair reading. Though I do not have conclusive evidence that English and Serbo-Croatian differ with respect to the availability of single-pair readings, the literature appears to support this assumption.

a theory about how the syntax of these constructions interacts with their available interpretations: namely, that CP-fronting supports only a pair-list reading, whereas IP-fronting supports both a single-pair and a pair-list reading.

While the connection made between syntactic structure and semantic interpretation in Bošković 2001a is appealing, evidence from Russian suggests something more complicated. Both single-pair and pair-list readings are available in Russian, but they correspond to different structures.

- (19) Kto *i* kakoj gorod zaxvatil?  
 who.NOM *and* which.ACC city.ACC conquered.3SG  
 ‘Who conquered which city?’  
 The Germans conquered Paris. (SP)  
 ??The Germans conquered Paris, the Russians conquered Berlin, . . . (PL)
- (20) Kto kakoj gorod zaxvatil?  
 who.NOM which.ACC city.ACC conquered.3SG  
 ‘Who conquered which city?’  
 ??The Germans conquered Paris. (SP)  
 The Germans conquered Paris, the Russians conquered Berlin, . . . (PL)

The crucial point here is that although Russian is classified as an IP-fronting language, a plain *wh*-question, as in (20), yields only a pair-list interpretation. Given Bošković’s formulation, (20) should in fact be ambiguous. The CMW construction in (19) is by hypothesis IP-fronting, and it results in only a single-pair reading (Kazenin 2002). This is at odds with the pattern observed in Bošković 2001a, 2002.

Capturing intuitions about single-pair versus pair-list readings can be very difficult, since speakers’ intuitions in this area are fragile. In fact, the judgments reported in (19) and (20) contradict the judgments reported in Stepanov 1998. The intuitions of my own consultants, however, and judgments reported in Kazenin 2002 and Grebenyova 2004, align with the judgments reported above. Aside from testing speakers’ intuitions by comparing scenarios with either pair-list or single-pair answer sets, few diagnostics exist. However, there is one diagnostic that can be applied (following similar observations in Nishigauchi 1998). Consider the examples in (21)–(24), which illustrate multiple *wh*-sluicing in Russian.<sup>9</sup>

- (21) *Každyj* priglasil *kogo-to* na tanec, no ja ne pomnju, *kto kogo*.  
*everyone* invited *someone* to dance but I NEG remember *who whom*  
 ‘Everyone invited someone to a dance, but I don’t remember who (invited) whom.’

<sup>9</sup> Note that, given the current view of Russian as an IP-fronting language, the sluiced material here is not the TP/IP complement of C, as has been claimed in previous work (Chung, Ladusaw, and McCloskey 1995). Further discussion of this issue appears in Grebenyova 2006 and Manetta, to appear.

- (22) #*Každyj* priglasil *kogo-to* na tanec, no ja ne pomnju, *kto i kogo*.  
*everyone* invited *someone* to dance but I NEG remember *who and whom*
- (23) *Kto-to* priglasil *kogo-to* na tanec, no ja ne pomnju, *kto i kogo*.  
*someone* invited *someone* to dance but I NEG remember *who and whom*  
 ‘Someone invited someone to a dance, but I don’t remember who (invited) whom.’
- (24) #*Kto-to* priglasil *kogo-to* na tanec, no ja ne pomnju, *kto kogo*.  
*someone* invited *someone* to dance but I NEG remember *who whom*

Grebenyova (2006) notes that the noncoordinated *wh*-items that appear just before the sluiced material are infelicitous if the antecedent forces a single-pair reading, as in (24). Noncoordinated *wh*-items in these constructions can appear only if the antecedent licenses a pair-list interpretation, as in (21). On the other hand, if the antecedent favors a single-pair reading, the *wh*-items are felicitous if they are in a CMW construction, as in (23). The judgments here are strong and stable across speakers.<sup>10</sup> We can safely conclude, then, that the CMW construction in Russian gives rise to a single-pair reading, while typical multiple *wh*-questions yield a pair-list reading.<sup>11</sup>

Our task, then, is to attempt to integrate the data on the interpretive options available for Russian multiple *wh*-questions and the CMW into a coherent view of the link between syntactic structure and semantic interpretation. In section 3.2, I discuss one influential view of the interpretation of multiple *wh*-questions in multiple *wh*-fronting languages, and I argue that it cannot account for the facts discussed above.

### 3.2 A Semantics for Multiple Questions Based on Hagstrom 1998

3.2.1 *Hagstrom 1998* Bošković (2001a) adopts a semantics for multiple questions developed by Hagstrom (1998).<sup>12</sup> A standard assumption (at least since Hamblin 1973) is that the semantic value of each question is the set of possible answers to it. Hagstrom’s theory relies crucially on the notion of the Q-morpheme, which is an existential quantifier over choice functions. The choice

<sup>10</sup> A reviewer points out that the increased stability of judgments in the sluicing examples might reflect a different type of *wh*-movement in such examples (i.e., movement to specifiers of CP and subsequent sluicing of TP/IP). If that were the case, however, only one order for multiple *wh*-questions would be permissible. In fact, both orders are allowed, as long as the ordering of quantifiers in the antecedent is identical.

<sup>11</sup> The Romanian evidence is entirely analogous and displays the same pattern: plain *wh*-fronting results in a pair-list reading, while the CMW construction has the single-pair reading (Donka Farkas, pers. comm.). However, a reviewer points out that judgments reported by Merchant (2001:100–112) for Turkish and Bulgarian multiple sluicing contexts appear not to align with the Russian facts: antecedents that set up what we might expect to be a single-pair reading still allow multiple noncoordinated *wh*-items in the sluice. It’s not apparent to me whether this is a property of sluicing, as another reviewer suggests in footnote 10, or a property of the nature of single-pair and pair-list readings in these languages. In either case, this is a very interesting area for further exploration.

<sup>12</sup> A brief exposition of Hagstrom’s proposal is contained in Bošković 2001a, and the outline presented here is based largely on that summary.



function applies to a nonempty set and yields a member of that set. The Q-morpheme originates lower in the clause and then moves to the specifier of CP. In Bošković's adaptation of this theory, two possible structures exist for multiple questions, and they correspond to the two different readings, pair-list and single-pair.

(25) [<sub>CP</sub> Q<sub>j</sub>-C ... [<sub>IP</sub> ... *wh*<sub>1</sub> ... V ... t<sub>j</sub> *wh*<sub>2</sub> ... ]] (PL)

(26) [<sub>CP</sub> Q<sub>j</sub>-C ... [<sub>FocP</sub> t<sub>j</sub>-F [<sub>IP</sub> ... *wh*<sub>1</sub> ... V ... *wh*<sub>2</sub> ... ]]] (SP)

In (25), the Q-morpheme merges with the lower *wh*-item and then covertly moves to the CP domain. The choice function variable left behind has the lower *wh*-item in its scope, but not the higher one. The result of the semantic composition is a set of sets of propositions, which in turn results in a pair-list reading. In (26), the Q-morpheme merges in a higher position (the specifier of a Focus Phrase),<sup>13</sup> and both of the *wh*-items are in the scope of the choice function. Composition proceeds up the tree until it reaches the choice function, which reduces the set of propositions to a single proposition, which becomes the input to further composition. This results in a set of propositions, which corresponds to a single-pair reading.

*3.2.2 Relativized Minimality* Hagstrom's proposal reduces the single-pair/pair-list distinction to a basic structural ambiguity. Bošković's (2001a) contribution shows that only one of these structures can be licensed in languages with overt *wh*-movement to the specifier of CP. Consider (27) and its corresponding failed derivation in (28).<sup>14</sup>

(27) Who invited whom to the dinner? (\*SP)

(28) \* [<sub>CP</sub> who<sub>j</sub> C ... [<sub>FocP</sub> Q-F [<sub>IP</sub> t<sub>j</sub> ... invited ... whom to the dinner]]] (\*SP)

Because the Q-morpheme carries a [+wh] feature, movement of the higher *wh*-item across it violates Relativized Minimality. The moved *wh*-item cannot govern its trace because the Q-morpheme constitutes an intervening governor of the same kind. Therefore, only a pair-list reading is predicted to be available in languages with overt movement to the specifier of CP. This analysis also predicts that both readings (pair-list and single-pair) should be available for the IP-fronting languages, as no Relativized Minimality violation should occur if no movement takes place to the specifier of CP (because there is no movement across the Q-morpheme in such cases).

*3.2.3 Unraveling the Argument* The Russian facts discussed in section 3.1 pose an apparent problem for the theory developed in Bošković 2001a. Two empirical observations appear to be at odds with the predictions of this theory:

<sup>13</sup> In line with much recent work on multiple *wh*-fronting, which posits that *wh*-items move to the specifier of a focus projection, Grebenyova (2004) posits a focus projection in her adaptation of Hagstrom's semantic composition. I follow her in adopting this convention, though it is not the only plausible one.

<sup>14</sup> The derivation in (28) is taken directly from Grebenyova 2004:176.

- Russian is an IP-fronting language but yields only the pair-list reading in multiple *wh*-questions.
- The CMW construction yields only a single-pair reading, even though it is analyzed as movement to an adjoined position at IP.

Grebenyova (2004) attempts to address part of the problem, positing that each language specifies in its lexicon what sort of Q-morpheme it has. On this proposal, Russian has only the Q-morpheme that merges with  $wh_2$ , as in (25). This solution gives only the pair-list reading for plain multiple *wh*-questions in Russian. An immediate problem arises: Russian *does* allow single-pair readings of multiple *wh*-questions. These questions just look slightly different; they must be rendered as CMW constructions. Grebenyova's proposed solution takes care of part of the problem, but it also predicts that we should never be able to get a single-pair reading for CMW constructions in Russian, since no single-pair Q-morpheme is available for Russian on her account.<sup>15</sup>

A second problem with the account proposed in Bošković 2001a is that Romanian, a CP-fronting language, also makes use of the CMW construction and also allows only the single-pair reading for this construction (Donka Farkas, pers. comm.).

- (29) Cine      și      ce            a    cumpărat?  
       who.NOM and what.ACC has bought  
       'Who bought (it) and what (did they buy)?' (SP/\*PL)

Assuming that each *wh*-item here will have undergone a separate movement to a specifier of CP from its respective base position, this movement should cause a Relativized Minimality violation in a single-pair derivation. Yet the construction in (29) and its single-pair interpretation are fully grammatical and felicitous.

A reviewer brings to light a third problem, relating to the claim that movement of the *wh*-item across the Q-morpheme causes a Relativized Minimality violation in single-pair derivations. Notice that the pair-list derivation of the question in (27) would look like (30).

- (30) [<sub>CP</sub> who<sub>i</sub> Q<sub>j</sub>-C . . . [<sub>IP</sub> . . . t<sub>i</sub> . . . invited . . . t<sub>j</sub> whom to the dinner]] (PL)

It appears that on the pair-list derivation, too, a Relativized Minimality violation would result, since the subject *wh*-phrase crosses the Q-morpheme on its way to the specifier of CP. The question, then, is why the pair-list reading of the question in (27) is not likewise blocked. To resolve the issue, we might stipulate that *wh*-movement must occur before the movement of Q,

<sup>15</sup> A reviewer suggests that the Q-morpheme account might be amended by specifying that the Q-morpheme attach to the &P that contains both *wh*-phrases by the end of the cycle, provided that & is merged low, attaching directly to a *wh*-phrase. While such an account might be worked out, it depends on a lexical specification for Q that I would prefer to avoid, if possible.

but this hardly seems satisfactory.<sup>16</sup> In section 3.3, I propose that a different structural pattern is responsible for the distribution of pair-list and single-pair readings. This observation provides a clue to why the CMW construction receives the single-pair reading in all languages for which it is attested.

### 3.3 *Structural Adjacency and Interrogative Interpretations*

*3.3.1 The Proposal* The view promoted here is that a certain type of structural configuration at LF is the precondition for a pair-list reading to result. I argue that the syntax of the CMW construction crucially does not meet this precondition, rendering the pair-list reading unavailable. The structural precondition proposed here originated from work on quantifier absorption (QA); it was first developed by Higginbotham and May (1981) and has been revised by Barss (2000). My goal here is to explore the empirical adequacy of the (revised) structural precondition as a predictor for the distribution of pair-list and single-pair readings in several languages. While this precondition has its roots in the theory of QA, my focus will be empirical coverage, rather than the mechanism of QA itself. In what follows, I briefly summarize this mechanism and then explore the empirical validity of what I call the *structural adjacency* requirement.

QA optionally maps two or more structurally adjacent quantifiers at LF into one binary (or *n*-ary) quantifier. For QA to work, we must assume that *wh*-items are quantifiers at LF.<sup>17</sup> We must also take the single-pair reading to involve a presupposition that the answer to a question consists of one pair (or *n*-tuple).

QA can map two structurally adjacent quantifiers into one binary (or *n*-ary) quantifier. The *n*-ary quantifier binds all relevant variables simultaneously, giving rise to a bijective interpretation for a multiple question.

(31) Which man admires which woman?

[WH<sub>x</sub>: *x* a man][WH<sub>y</sub>: *y* a woman] *x* admires *y* → [WH<sub>2</sub><sup>1,2</sup>*x,y*: *x* a man & *y* a woman]  
*x* admires *y*

QA is defined so that for every *x* in the domain, there is a unique *y*, and for every *y* in the domain, there is a unique *x*. There is a presupposition that a complete answer to such a question requires an exhaustive listing of pairs, which results in a pair-list reading.<sup>18</sup> On this view, the

<sup>16</sup> See Bošković 2001a:fn. 20 for further discussion of this issue.

<sup>17</sup> The Slavic language family has come to be known for “wearing its LF on its sleeve.” That is, the syntactic ordering and structure of *wh*-items can be assumed to be identical to their LF ordering and structure.

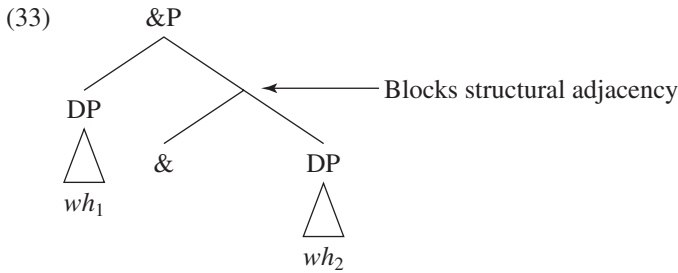
<sup>18</sup> It has been argued that nonbijective interpretations exist (see Comorovski 1996, Dayal 2002). If this turns out to be the case, the bijectivity condition on the absorption mechanism will need to be relaxed or otherwise revised in some way.

key to deriving the right distributions of pair-list and single-pair readings will be the correct understanding of structural adjacency for quantifiers at LF. In order to undergo QA, two (or more) quantifiers must be in a particular structural configuration at LF: they must be *structurally adjacent*, under the definition given in (32).

- (32)  $\alpha$  and  $\beta$  are *structurally adjacent* if and only if
- $\alpha$  c-commands  $\beta$ , and
  - $\alpha$  c-commands no head that c-commands  $\beta$ .

(32b) requires that c-command be *immediate*, in the sense that no head may intervene between the two quantifiers at issue.<sup>19</sup>

With the structural adjacency requirement defined, we are in a position to see why QA will be blocked in the CMW construction. In section 2.2, I analyzed the CMW as forming an &P structure, and I adopt that structure here.

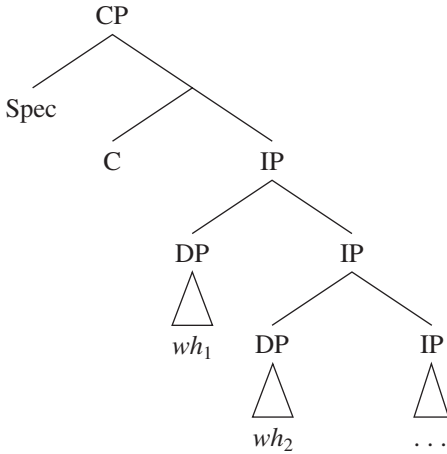
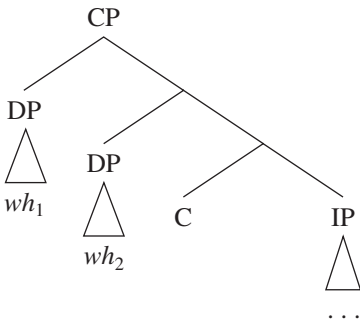


The structural adjacency precondition for QA is not met in (33). In this structure,  $wh_1$  does c-command  $wh_2$ , but there is also an intervening head,  $\&$ , which is c-commanded by  $wh_1$  and which itself c-commands  $wh_2$ . This violates the second part of the structural adjacency requirement, and thus QA cannot apply. By assumption, the coordinator here is semantically vacuous; it receives no interpretation of its own and serves only as a structural blocker to QA.<sup>20</sup> If we take structural adjacency to be the relevant precondition for deriving the pair-list reading, then CMW constructions are predicted never to result in a pair-list reading. This is confirmed by data from Russian (Grebnyova 2004), Romanian (Donka Farkas, pers. comm.), Czech (Skrabalova 2006), Serbo-Croatian (Browne 1972), and Hungarian (Lipták 2003), all of which allow the CMW construction.

<sup>19</sup> The proposal made here differs slightly from previous proposals (Higginbotham and May 1981, May 1985) in defining the structural precondition more precisely. Previous instantiations have formulated this precondition as requiring either that  $\alpha$  immediately c-command  $\beta$  (leaving *immediate* undefined) or that  $\alpha$  and  $\beta$  c-command each other.

<sup>20</sup> The coordinator in Russian is not always semantically vacuous, of course. It clearly has numerous other (perhaps nontypical) functions; as a reviewer points out, it can also appear as a focus particle in contexts not related to multiple *wh*-questions. Looking forward, it would be interesting to investigate the nature of the connection, if there is one, between the ability of *i* to serve as a focus marker and the hypothesized focus-driven *wh*-movement in languages like Russian (Stepanov 1998).

Adopting structural adjacency as the relevant configuration for obtaining pair-list readings has thus far yielded the correct result: it prevents the CMW construction from ever being assigned a pair-list reading. Let us now turn to obtaining the pair-list reading for noncoordinated multiple *wh*-questions in Russian, Serbo-Croatian, Romanian, and Bulgarian. Recall Richards's (2001) schemas for IP-fronting and CP-fronting languages, repeated here in (34) and (35), respectively.

(34) *IP-fronting languages*(35) *CP-fronting languages*

Both configurations meet the requirement for structural adjacency. In each structure,  $wh_1$  c-commands  $wh_2$ , and no head intervenes. Just because the two configurations in (34) and (35) fit the criterion for QA, however, does not make the solution complete. QA was originally formulated as an optional rule, in part because Higginbotham and May (1981) were concentrating exclusively on English, which presumably allows both the pair-list and the single-pair readings, depending on context (though the default reading, without context, is reported to be the pair-list reading). Thus, optional rule application seemed fitting. However, we have already seen that the multiple *wh*-fronting languages vary with respect to whether the single-pair reading is possible in plain multiple *wh*-questions (e.g., in Serbo-Croatian). It appears that QA would have to apply optionally in some cases and obligatorily in others, as sketched in (36)–(39).

(36) *Serbo-Croatian*

*Wh*-quantifiers would need to undergo QA *optionally*.

- Both single-pair and pair-list readings are available for noncoordinated multiple *wh*-questions.
- A single-pair reading is available via a CMW construction; QA is blocked.

(37) *Bulgarian*

*Wh*-quantifiers would need to undergo QA *obligatorily*.

- Only pair-list readings are available for noncoordinated multiple *wh*-questions.

(38) *Russian*

*Wh*-quantifiers would need to undergo QA *obligatorily*.

- Only pair-list readings are available for noncoordinated multiple *wh*-questions.
- A single-pair reading is available via a CMW construction; QA is blocked.

(39) *Romanian*

*Wh*-quantifiers would need to undergo QA *obligatorily*.

- Only pair-list readings are available for noncoordinated multiple *wh*-questions.
- A single-pair reading is available via a CMW construction; QA is blocked.

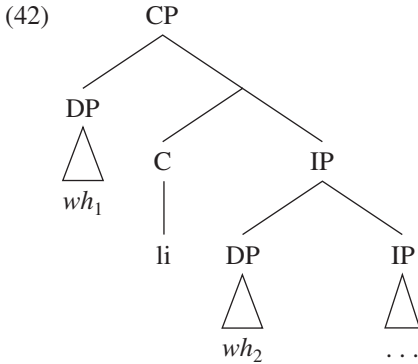
Recall that the solution proposed in Grebenyova 2004 relies heavily on lexical specification for the sort of Q-morpheme a language allows. In section 3.2.3, I argued that that proposal does not cover the range of relevant facts. Still, there is certainly a remaining question about how to account for the distributions in (36)–(39), if we take structural adjacency to be the relevant condition. While I leave this question for further research, note that on this view, Serbo-Croatian and English are two exceptional languages in which QA is presumed to apply optionally. In section 4, I tentatively propose that QA applies obligatorily, arguing that the availability of single-pair readings in English and Serbo-Croatian is related to exceptional configurations in which the structural precondition for QA is not met.

*3.3.2 Multiple Wh-Items and Clitics in Serbo-Croatian and Bulgarian* The proposal in the previous section makes a strict prediction about when a pair-list reading can be obtained: *wh*-items in CMW constructions are not structurally adjacent and thus can never receive a pair-list reading. We might also predict that other *wh*-constructions in which two *wh*-items are not structurally adjacent should never allow a pair-list interpretation. It happens that Serbo-Croatian and Bulgarian provide a rich testing ground for this prediction.

Bošković (2001a, 2002) develops a theory of multiple *wh*-fronting for Serbo-Croatian, which holds that this sort of fronting in matrix clauses never actually reaches the CP domain. This is consistent with the present classification of Serbo-Croatian as an IP-fronting language. However, it has been noted that in certain instances, one of the *wh*-items can in fact move to the specifier of CP, leaving all other *wh*-items still adjoined to IP. In such cases, what is normally analyzed as an overt complementizer, *li*, is realized between the first *wh*-item and the remaining ones.

- (40) Ko li koga pozva na večeru?  
 who c whom invited to dinner  
 ‘Who (on earth) invited whom to dinner?’ (SP/??PL)  
 (Grebenyova 2004:181)
- (41) Ko li koga tuče?  
 who c whom beats  
 ‘Who (on earth) is beating whom?’ (SP/??PL)  
 (Grebenyova 2004:181)

Not surprisingly, the only reading available for (40) and (41) is the single-pair reading. Following an analysis proposed in Bošković 2001b, I will take the leftmost *wh*-item in these examples to be located in the specifier of CP. In such a case, the structure of the left edge should look like (42).



The interrogative *li* has been analyzed as a complementizer for Serbo-Croatian (Bošković 2002); this is, then, an instance in which linear order can actually help us to determine the landing site of a *wh*-item. Additional evidence, such as the fact that overt-C questions in Serbo-Croatian exhibit superiority effects, while nonovert-C questions do not, points to a structural asymmetry of the type sketched in (42). An expanded discussion of this issue and its relevance for a QA analysis appears in section 4.

Crucially, the precondition for structural adjacency of the two *wh*-quantifiers is not met in (42): *wh*<sub>1</sub> c-commands *wh*<sub>2</sub>, but *wh*<sub>1</sub> also c-commands an intervening head, C, which is not c-commanded by *wh*<sub>2</sub>. If a structure like (42) is indeed correct, then the QA account put forth in section 3.3.1 correctly predicts that only the single-pair reading will be appropriate in the Serbo-Croatian examples (40)–(41).

Despite the tidy result for Serbo-Croatian *li*-questions, the presence of other clitics between *wh*-items in Serbo-Croatian yields seemingly contradictory results. I argue, however, that importing the analyses of these phenomena developed in Bošković 2001b is sufficient to explain the difference in interpretation. As we might expect, differences with respect to interpretation should arise depending on whether the clitic is placed between *wh*-items syntactically or whether it is placed there because of a PF requirement. In the former case, we get the result just described:

LF structure is read off the syntactic structure, and the two *wh*-items are not structurally adjacent. In the latter case, the two *wh*-items are indeed structurally adjacent, and a pair-list reading should result (optionally, for Serbo-Croatian). This prediction seems to be borne out. Consider (43), which can receive either a pair-list or a single-pair reading, according to the judgment in Bošković 2001a.

- (43) Ko je šta kupio?  
 who is what bought  
 ‘Who bought what?’ (SP/PL)  
 (Bošković 2001a:9)

In (43), an auxiliary clitic appears between the two *wh*-items, yet both readings for the multiple *wh*-question are available. Following Bošković’s (2001b) extensive work on clitic placement, I adopt an analysis of the auxiliary clitic in which its placement is regulated by a PF requirement that it appear second in the clause. On Bošković’s proposal, a lower copy of one of the moved *wh*-items is pronounced in order to satisfy the PF requirement of the auxiliary clitic; in the syntax, the *wh*-items are still structurally adjacent, allowing for the possibility of a pair-list reading.<sup>21</sup>

One final clitic-placement phenomenon deserves mention here. Bulgarian also allows the question particle *li* to cooccur with multiple *wh*-items; the clitic appears second in the clause, just as in Serbo-Croatian. In contrast to the Serbo-Croatian case, however, only a pair-list reading is available for these questions in Bulgarian.

- (44) Koj li kakvo kupuva?  
 who c what bought.3sg  
 ‘Who (on earth) is buying what?’ (PL/??SP)  
 (Lydia Grebenyova, pers. comm.)

(44) looks strikingly similar to the Serbo-Croatian *li*-questions (40) and (41), but the availability of readings is different; instead of an exclusive single-pair reading, (44) has an exclusive pair-list reading. Recall that structurally, Bulgarian and Serbo-Croatian fall into separate categories: Bulgarian *wh*-questions are analyzed as CP-fronting, while Serbo-Croatian *wh*-questions are analyzed as IP-fronting. Again following the analysis proposed in Bošković 2001b, I take the *li*-particle in Bulgarian to be placed in the syntax at C; this creates the syntactic structure in (45).

- (45) [<sub>CP</sub> koj kakvo [<sub>C</sub> li kupuva]]

However, according to Bošković (2001b), the Bulgarian *li*-particle is still subject to a PF require-

<sup>21</sup> The proposal as it stands predicts that purely prosodic placement of a clitic in Serbo-Croatian will not have any interpretive consequence. A reviewer points out that an interesting testing ground for this prediction might be phrases of the type ‘[which *x*]’, where the clitic is placed after ‘which’ because of a prosodic requirement that it appear second in the clause. I have not yet tested such cases, but if they exist, the prediction is clear: the reading should not be affected.



ment, which means that a lower copy of one of the *wh*-items is actually pronounced in order to satisfy it.<sup>22</sup>

(46) [<sub>CP</sub> koj kakvo [<sub>C'</sub> li kakvo kupuva]]

It should become clear now why the Bulgarian *li*-questions yield only a pair-list reading: if QA is always obligatory in Bulgarian, and the structural precondition is met, then the judgment in (44) is expected. Thus, despite the surface similarity of Bulgarian and Serbo-Croatian *li*-questions, clitic placement in these two instances is regulated by different mechanisms: both complementizers are generated in C, but because Bulgarian is a CP-fronting language, this is not enough to land *li* in second position in Bulgarian. An additional PF requirement forces a lower copy of a *wh*-item to be pronounced. In the syntax, then, only the Bulgarian structure meets the precondition for QA.

Here it is worth noting that Kazenin (2002) has proposed a different way of accounting for the single-pair reading correlated with the Russian CMW construction. On Kazenin's view, noncoordinated multiple *wh*-questions have the pair-list reading because one of the *wh*-items moves to a universal quantifier position at LF (É. Kiss 1993, Comorovski 1996, Krifka 1999, Dayal 2002). On Kazenin's approach, the single-pair reading for the CMW follows from the fact that moving a *wh*-item out of a coordinate structure would violate the Coordinate Structure Constraint. If no *wh*-item can move out of the coordinate structure, then no *wh*-item can move to the necessary position at LF, and no pair-list reading can be obtained. While this proposal does provide a way of understanding why the CMW is associated with the single-pair reading, it cannot account for the cases of clitic placement we are looking at here. Since no coordinate structure is involved in Serbo-Croatian cases like (40)–(41), Kazenin's proposal does not explain why a pair-list reading is impossible in these cases. The QA analysis proposed here covers a broader range of cases, because it refers to a structural precondition for pair-list readings that excludes not only the CMW, but also other constructions in which a head intervenes between two otherwise structurally adjacent *wh*-items.

It is important to emphasize that the claims about clitic placement on which this discussion rests were made entirely independently of the concerns of this article. Clitic placement in the Slavic language family, and the requirements on each particular clitic in the languages at issue, have been very well documented; the analyses presented in Bošković 2001b are carefully thought out and well developed. What should be surprising is how well the data and the already developed analyses align with the idea of structural adjacency. By contrast, none of the data concerning the interaction of clitics with multiple *wh*-items can be accounted for using an approach based on Hagstrom's (1998) semantics. The analyst must again resort to specifying lexical conditions on the Q-morpheme to achieve the same empirical results (along the lines of Grebenyova 2004).

<sup>22</sup> A reviewer points out that the lower copy here is pronounced in what is presumably an argument position (specifier of TP/IP). This result may in turn make predictions about argument-adjunct asymmetries for *wh*-words. This problem is inherited from Bošković 2001b; unfortunately, resolving it is too extensive a task for the present discussion.

#### 4 Remarks

The discussion thus far has stemmed from the observation that the standard approach to the semantics of multiple *wh*-questions predicts the wrong interpretation for CMW constructions in Russian (as well as Czech, Hungarian, and Romanian). I have proposed an alternative treatment, which takes structural adjacency at LF to be the relevant configuration for obtaining pair-list readings. Because QA can apply only when a certain structural precondition is met, single-pair readings are expected any time this precondition is not met. Since the CMW does not meet the precondition of structural adjacency, the single-pair reading for the CMW follows from this analysis. The predicted result also holds any time clitics intervene as syntactic heads between multiple *wh*-items in the syntax. When clitics are placed between *wh*-items because of a prosodic restriction, a pair-list reading can still be obtained; this is expected if structural adjacency is a requirement that holds at LF (and is therefore blind to prosodic structure).

The QA proposal, as construed here, leaves several questions unanswered. Possibly the most pressing one is this: what gives rise to the distribution of just pair-list or both pair-list and single-pair readings in the cases where the syntactic precondition for QA is met? This question has to do with the distributions sketched in (36)–(39). It seems that in certain languages, the *wh*-quantifiers would need to be able to undergo QA optionally, while in others the operation appears to be obligatory. This distinguishes Romanian, Bulgarian, and Russian from Serbo-Croatian and English.

Although I leave this question open here, one comment may be relevant: if the possibility of having two readings (single-pair and pair-list) depends on structural adjacency, then perhaps the languages that allow both readings also allow two possible structures for a typical multiple *wh*-question. In particular, it is already apparent that languages like Serbo-Croatian allow two possible positions for the higher *wh*-item (either in the specifier of CP or adjoined to IP) (Bošković 2002). The reason for this choice is unclear, but in section 3.3.2, we saw that the structural option of fronting one *wh*-item to the specifier of CP is a viable alternative, and that this alternative, as predicted, has consequences for the question's interpretive possibilities. More work would need to be done, then, to nail down exactly what motivates these two possibilities in Serbo-Croatian. Minimally, though, we may be able to posit that the availability of both readings corresponds to the availability of both positions for *wh*-quantifiers at LF.

Even if we decide to adopt this tentative proposal for Serbo-Croatian, however, we are left with the case of English. Indeed, QA was originally proposed by Higginbotham and May (1981) as an optional rule for structurally adjacent *wh*-quantifiers at LF, because of the presumed availability of both readings (pair-list and single-pair) in English. Since Pesetsky 1987, however, it has been widely thought that *wh*-quantifiers do not always raise to a clause-initial position at LF in English. Various factors have been claimed to prevent this movement. In Pesetsky 1987, the crucial factor is whether or not the *wh*-phrase is discourse-linked (D-linked), because D-linked *wh*-phrases remain in situ. The empirical claim is that phrases of the form [which *x*] are more likely to be D-linked, since they invoke a contextually determined set from which one should choose. If this is the case, we should expect a distinction in available readings between multiple questions in which *wh*-phrases are D-linked and ones in which they are not, since only if the *wh*-item is raised covertly will the crucial structural adjacency condition be met.

- (47) Which man did you persuade to read which book? (SP > PL)  
 (48) Who did you persuade to read what? (PL > SP)

Indeed, the contrast between (47) and (48) appears to confirm that *which*-phrases have a tendency to favor the single-pair reading.<sup>23</sup> Combining the observations made in Pesetsky 1987 with the idea of QA, it seems natural to suggest that the availability of pair-list readings is contingent on the possibility of raising both *wh*-phrases at LF. Raising *wh*-items at LF may in turn be associated with factors like D-linking, among possibly others. Such a proposal certainly needs to be explored further, but if the result is accurate with respect to the interpretive judgments for English, it would confirm that QA really can be viewed as obligatory, when the structural precondition of adjacency is met.

A generalization that can be safely taken away from this work is that structural adjacency at LF, as I have defined it, is the relevant factor in determining the sort of reading that a multiple *wh*-question will yield. This observation aligns nicely with Higginbotham and May's (1981) work on QA, but a fully fleshed-out semantic analysis based on QA has yet to be provided. My goal in this article has been to explicate the nature of the link between the structure of multiple *wh*-questions and their interpretation. A next step along this path is to develop a fuller semantic account of how the unification of two quantifiers actually yields a pair-list reading.

## References

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<sup>23</sup> A reviewer notes that the single-pair reading is less salient if the *which*-phrase is plural (e.g., *Which men did you persuade to read which books?*). It seems to me, however, that the felicitous answer to this question should still consist of a single pair (e.g., *I persuaded the men in the library to read the entire Dickens collection*). Given the divergent judgments, it is apparent that more empirical work needs to be carried out before we can better understand whether it is really D-linking at play in cases like (47), or plurality.

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