

ON THE OPERATOR FREEZING EFFECT*

ABSTRACT: Based on a number of operations creating operator-variable chains, namely, wh-movement, focalization, topicalization, quantifier raising, and the NPI-licensing movement, the article argues that operators in operator-variable chains cannot undergo further operator movement. It is shown that the generalization in question can be deduced from Chomsky's (2000, 2001a) Activation Condition. The article also discusses the contexts where Bulgarian, a multiple wh-fronting language, allows extraction out of wh-islands. A new generalization is proposed regarding the ability of languages like Bulgarian to violate the Wh-Island Constraint in the contexts in question, which dissociates it from multiple wh-fronting and ties it to a property of D, in particular, availability of affixal articles.

KEYWORDS: Activation Condition, affixal articles, multiple wh-fronting, operator, superiority, wh-islands

1. Introduction

The goal of this article is to establish the validity of the generalization in (1) based on crosslinguistic evidence regarding interaction of a number of movement operations creating operator-variable relations, namely, wh-movement, focalization, topicalization, quantifier raising, and the NPI-licensing movement.

(1) Operators in operator-variable chains cannot undergo further operator movement.

(1) prevents an instance of operator movement, such as those mentioned above, from feeding another operator movement, including its own reapplication.¹ I will also show that there is no need to elevate (1)

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¹Note that by *operator* in (1) I do not mean an element located in any A'-position, but only in an A'-position in which the element in question is semantically interpretable as an operator. To illustrate this, consider (i):

(i) [_{CP} What_i do you think [_{CP} t_i that Mary bought t_i]]

to the status of a principle of Universal Grammar. More precisely, I will show that (1) can be deduced from independently motivated mechanisms. In other words, it is a theorem.

In previous work (Bošković 1997b; see also Bošković and Takahashi 1998 and Bošković 2003), I suggested a generalization that is similar, but not identical, to (1).² However, these works did not make a comprehensive empirical argument that the operator freezing effect as stated in (1) indeed holds, which is necessary before the generalization in (1) can be adopted. Providing such an argument based on the failure of interaction of a number of different operator-variable creating movement relations is one of the main goals of this article. I also failed to show in my earlier work that (1) is deducible from independently needed assumptions, which will be done in this article.

Recently, and after the current work was originally written, Rizzi (2006) appeared, suggesting pretty much the same generalization as Bošković (1997b, 2003). However, Rizzi (2006) is theoretically quite different from the current work, essentially leaving (1) at the level of a principle of Universal Grammar. Moreover, the empirical scope of that work is also very different from the current work, since it does not consider the data (apart from (8)) given in section 2 in support of (1), while most of the data considered in Rizzi (2006) are not covered by (1). Since the data in question seem more relevant to the issue of how pied-piping works than to (1) they will not be considered here.³

The operator position in (i) is the matrix SpecCP, not the embedded SpecCP, since the wh-phrase is interpreted/interpretable as an operator only in the former position. Successive cyclic wh-movement in (i) is then not ruled out by (1). It is important to bear in mind during the discussion below that not every A'-position is an operator position. (Notice also that under approaches on which successive cyclic movement, such as the one in (i), does not involve feature checking (see Bošković 2002b, 2007, Boeckx 2003, among others) (1) could be restated as follows: feature-checking A'-movement cannot feed another feature-checking A'-movement.) Note also that examples like *?Which athletes_i do you wonder [which picture of t_i]_j Mary bought t_j* are irrelevant to the generalization in (1) since we are dealing here with movement out of an operator, not of an operator.

²For example, the one case discussed in Bošković and Takahashi (1998:359) is not covered by (1).

³Thus, two of Rizzi's central cases (see footnote 41 for the remaining case) concern the abstract structure in (i), where XP, which itself undergoes operator movement motivated by feature F to a lower position, pied-pipes YP, which needs to undergo operator movement to a higher position motivated either by feature F or a different feature K. (The reader is referred to Bošković in preparation for relevant discussion of Rizzi's work as well as a comparison with the current work. As noted in Bošković in preparation, the examples Rizzi gives to illustrate the pattern in (i) are actually also ruled out independently by Saito's (1992) (see also Harada 1972) constraint that bans wh-phrases from occurring outside of the question CP where they take scope.)

(i) [_{XP[F]} YP[F/K]...]

Epstein (1992) (partly based on Lasnik and Uriagereka 1988, see also Müller 1998 for an extension/update of this work) and Müller and Sternefeld (1993) have also proposed generalizations that are quite similar to (1) but still clearly only partially overlap with it. To mention just a couple of differences, as far as I can tell, Epstein (1992) would not account for the wh-island data from sections 2.4. and 2.6. and the topicalization data from section 2.5. and Müller and Sternefeld (1993) would not account for the scope data from section 2.1., the NPI data from section 2.2., and the wh-island data from sections 2.4. and 2.6. Given that, as can be easily verified by examining the arguments for (1) from section 2 and the deduction of (1) from section 3, the current work differs in important respects from these two works both empirically and theoretically, and given rather serious problems with these two works already noted in the literature (see, for example, Müller and Sternefeld 1996 and Epstein

The article is organized as follows: The goal of section 2 is to make a case for the generalization in (1). In section 3 I show that (1) is deducible from independently needed assumptions. Section 4 offers a brief conclusion. Finally, in the appendix I discuss selective wh-island insensitivity, i.e. the ability of some languages to void the Wh-Island Constraint in certain contexts.

2. Empirical arguments for the operator freezing effect

2.1. *Quantifier raising*

The well-known ban on Quantifier Raising (QR) of topicalized quantifiers illustrates the effect of (1). Lasnik and Uriagereka (1988) (see also Epstein 1992) observe that although it is standardly assumed that QR is clause bounded, there is actually variation regarding the possibility of having *every problem* scope over *someone* in (2a). Many speakers apparently do allow *every problem* to have wide scope in (2a). Significantly, Lasnik and Uriagereka (1988) point out that *every problem* cannot have scope over *someone* in (2b) even for the speakers for whom it can scope over *someone* in (2a).

- (2) a. Someone thinks that Mary solved every problem.
b. Someone thinks that every problem, Mary solved.

(2a) and (2b) differ in that the relevant NP in (2b) undergoes topicalization, movement that establishes an operator-variable relation (see Saito 1989). Assuming that quantifier interpretation is achieved via QR, *every problem* would scope over *someone* in (2a) as a result of QR into the matrix clause. Given this, (2b) indicates that topicalization has a freezing effect on QR (i.e., a topicalized element cannot undergo QR), which follows from (1) given that *every problem* is located in an operator position prior to QR.

The following Spanish data noted in Uribe-Echevarria (1992) illustrate the same point as (2).

- (3) a. Qué dices que ha comprado todo dios?
what say (you) that has bought everybody
'What do you say that everybody bought?'
b. Qué dices que todo dios ha comprado?

The quantified NP can take wide scope with respect to the wh-phrase in (3a), but not in (3b). Uribe-

1992:246, footnote 12 for problems with Epstein 1992, and Culicover 1996 for problems with Müller and Sternefeld 1993), I will not discuss these two works in any detail here. However, the reader should bear in mind that they (as well as Lasnik and Uriagereka 1988 and Müller 1998) are important predecessors of the current work.

Echevarria argues that wide scope of the quantified NP in (3a) is achieved via QR of the NP into the matrix clause (see, however, Agüero-Bautista 2001 for an alternative account). What about (3b)? A number of authors, including Uribe-Echevarria (see also Barbosa 1995, Ordóñez 1997, and Hornstein 1999, among others), have argued that, in contrast to English subjects, which are located in an A-position, preverbal subjects in Spanish are located in an A'-position. Under this analysis, the preverbal subject in Spanish (3b) is essentially treated in the same way as the topicalized NP in English (2b) (the “real” subject in the Spanish example would be a *pro* coindexed with the topicalized “subject”).⁴ The account of (2b) adopted above can then be straightforwardly extended to (3b): the subject NP in (3b) cannot take wide scope because the QR of the NP into the matrix clause, a prerequisite for the wide scope reading, is blocked by (1).⁵ The problem in question does not arise in (3a), where the quantified NP is located in an A-position, hence it is allowed to undergo QR into the matrix clause.⁶

As discussed in Epstein (1992), scope freezing languages like Hungarian are also relevant here. Hungarian NPs, including quantificational NPs, are typically moved in overt syntax to various pre-IP positions, which, according to Szabolcsi (1997), include topic position, focus position, and positions where only quantificational NPs can move. Most importantly, the scope of quantificational NPs moved to any of these positions is fixed (see, for example, Kiss 1987, 1991 and Szabolcsi 1997). Significantly, as pointed out by Szabolcsi, the scope of quantificational NPs that do not undergo the movements in question is not fixed (they behave similarly to English QNPs). Given the natural assumption that the movements in question involve operator, A'-movements (Szabolcsi in fact argues that we are dealing here with semantically active A'-movements), the scope freezing effect of the movements in question may be another illustration of (1): QNPs undergoing overt operator movement are prevented by (1) from undergoing QR, which would create scope ambiguities. On the other hand, QNPs that do not undergo overt

⁴In this respect, it is worth noting that the preverbal subject in Spanish patterns with English topics regarding the data in (5) and (4b) (though the latter is somewhat controversial; see Ordóñez 1997 for relevant data and original references).

⁵Strictly speaking, being a descriptive generalization (1) does not really account for anything. However, it will be shown below that (1) is actually a theorem deducible from independent assumptions, which means that accounting for a sentence by appealing to (1) is actually explanatory. In light of this, I will continue to use the term “account” when discussing the effect of (1) on particular examples.

⁶Uribe-Echevarria also points out that the quantified NP in English (i) can take wide scope, which she interprets as indicating that, as standardly assumed, the preverbal subject position in English is an A-position, which means that the subject is allowed to QR into the matrix clause in English (i).

(i) Who do you think everyone saw at the rally?

Another interesting scope difference between Spanish and English that follows from the claim that preverbal subjects in Spanish are basically topics while they are “regular” subjects located in an A-position in English, concerns the relative scope of objects and subjects. Thus, Hornstein (1999) points out that, in contrast to English, it is difficult for an object to take wide scope with respect to a preverbal subject in Spanish and shows that this follows from the topicalization analysis of Spanish preverbal subjects.

operator movement can undergo QR, hence they exhibit the same scope ambiguities as, for example, English QNPs.

2.2. *Negative polarity items*

The data in (4) regarding negative polarity item (NPI) licensing, noted by Lasnik and Uriagereka (1998) (see also Epstein 1992), provide additional evidence for (1).

- (4) a. I don't think that Mary solved any problems.
b. *I don't think that any problems, Mary solved.

A number of authors have argued that NPIs like *any* must move to the licensing negation in LF (see, for example, Kawashima and Kitahara 1992, Lasnik and Uriagereka 1988, Lee 1992, Sohn 1995 and especially Progovac 1994). Given this, the contrast in (4) can be accounted for in the same way as the contrast in (2). Since the NPI in (4b) is located in an operator position, it is not allowed to undergo LF movement to the matrix negation, given (1). The problem does not arise in (4a), where LF movement of the NPI into the matrix clause is not blocked by (1).⁷

2.3. *LF wh-movement*

Consider now the well-known ban on topicalizing wh-phrases (see Lasnik and Saito 1991, Lasnik and Uriagereka 1988, Rizzi 1991, Epstein 1992, Müller and Sternefeld 1993, 1996, among many others), illustrated by (5).⁸

⁷See, however, den Dikken and Giannakidou (2002) and Giannakidou (1998) for a different perspective on (4b). As pointed out by Marcel den Dikken (personal communication), a potential problem for the movement analysis of NPIs is that even speakers who disallow inverse scope in (2a) accept (4a), which seems to indicate that the locality of the NPI-licensing movement is different from that of the traditional QR (the same actually seems to hold for LF wh-movement).

⁸I am intentionally using a D-linked wh-phrase here. It is possible that non-D-linked wh-phrases are banned from undergoing topicalization due to an information conflict: they stand for purely new information, while topicalization typically affects elements denoting old information. The problem in question should not arise with D-linked wh-phrases, given that with D-linked wh-phrases, the range of felicitous answers is limited by a set of objects familiar to the speaker and the hearer as a result of it being referred to in the discourse or salient in the context. The range of reference of D-linked wh-phrases is thus discourse given. Bošković (2002a) in fact shows that due to their "discourse givenness", D-linked wh-phrases are banned from undergoing focus movement in languages that have focus movement of wh-phrases. (See also den Dikken and Giannakidou 2002, Grohmann 1998, Reglero 2003, 2004, and Wu 1999, among others, for claims that D-linked wh-phrases can in principle undergo topicalization.) It is worth noting here that, given the reasoning employed above, if there are languages where wh-phrases undergo topicalization the wh-phrases in question would not undergo LF wh-movement. One possibility is that they could be associated with the interrogative C via unselective binding. In this respect, see Bošković (2002a), who provides evidence against a uniform crosslinguistic treatment of wh-phrases in-situ (i.e. I provide evidence that we should not treat wh-

(5) *Who thinks that which problem, Mary hates.

Given (1), the ungrammaticality of (5) can be straightforwardly accounted for if we assume that English wh-phrases that remain in situ overtly undergo LF wh-movement (see, for example, Huang 1982). More precisely, the ungrammaticality of the construction then follows from (1).

Another argument involving LF wh-movement concerns the impossibility of scrambling of wh-phrases in German. It is well-known that languages differ with respect to the ability of wh-phrases to undergo scrambling. Thus, Japanese wh-phrases can undergo scrambling, whereas German wh-phrases cannot (see Grewendorf and Sabel 1999 and Müller and Sternefeld 1993, 1996, among others). The impossibility of scrambling wh-phrases in German is illustrated by (6b), where *was* undergoes scrambling, which contrasts with (6a) in the relevant respect. On the other hand, (7) shows that Japanese wh-phrases can undergo scrambling. ((6a-b) are taken from Müller and Sternefeld 1993.)

(6) a. Ich weiß nicht [_{CP} wem_j [_{IP} der Fritz t_j was gesagt hat]].

I know not whom_{DAT} ART_{NOM} Fritz what_{ACC} said has
'I don't know what Fritz said to whom.'

b. *Ich weiß nicht [_{CP} wem_j [_{IP} was_i [_{IP} der Fritz t_j t_i gesagt hat]].

I know not whom_{DAT} what_{ACC} ART_{NOM} Fritz said has

(7) [_{IP} Taro-ga [_{VP} [dono hon-o]_i Hanako-ni [_{CP} PRO_j t_i yom-u yooni] it-ta no]]?

Taro-nom which book-acc Hanako-dat read-nonpast C tell-past Q

'Which book did Taro tell Hanako to read?'

The status of German scrambling with respect to the A/A' distinction is somewhat controversial. Most authors assume that German scrambling of the kind illustrated in (6b) involves A'-movement, strong evidence for which is provided by the fact that NPs scrambled to the pre-subject position in German cannot bind an anaphor within the subject. It is also standardly assumed that German scrambling *always* has semantic effects (see, e.g., Diesing 1992, Lenerz 1977, Moltmann 1991, Sauerland 1999, and Grewendorf 2005; in fact, according to Grewendorf, German scrambling involves either topicalization or focalization). German scrambling is thus a semantically contentful A'-movement. In other words, German scrambling seems to be the kind of movement that should be affected by (1). The ungrammaticality of (6b) can then be accounted for in the same way as the ungrammaticality of (5). More generally, we now have a uniform account of the impossibility of scrambling wh-phrases in German and topicalizing wh-phrases in English.

phrases that do not undergo overt wh-movement in the same way in all languages).

They both run afoul of (1).⁹ What about Japanese (7), where the *wh*-phrase undergoes scrambling? Saito (1989, 1992) convincingly demonstrates that Japanese scrambling does not involve semantically contentful operator movement—in fact, he shows that Japanese A'-scrambling is completely semantically vacuous.¹⁰ (For relevant discussion, see also Tada 1993 and Bošković and Takahashi 1998, among others. Note that A-scrambling does have semantic effects.) This makes (1) irrelevant to Japanese scrambling. I conclude, therefore, that (1) accounts for the different behavior of German and Japanese with respect to the possibility of scrambling *wh*-phrases, given the independently motivated difference in the semantic properties of German and Japanese scrambling.

To summarize the discussion so far, we have seen that (1) provides a uniform account of the impossibility of topicalizing *wh*-phrases, NPIs, and quantifiers that need to undergo QR.

2.4. *Wh-islands in English*

So far we have discussed cases where the movement that moves the relevant element *X* to an operator position is overt, while the movement that attempts to move it out of this operator position is covert. I now turn to cases where all relevant movements are overt. (1) may be needed to account for the ungrammaticality of constructions like **What do you wonder John bought (when)*. Chomsky (1995:chapt. 4) argues that features that have semantic import (interpretable features) are ‘unaffected’ by checking. They can undergo checking both more than once and less than once. According to Chomsky (1995), the *+wh*-feature of *wh*-phrases is an interpretable feature.¹¹ Therefore, it can enter multiple checking. Given this, consider the derivation in (8). *What* first moves to the lower SpecCP, checking the strong *+wh*-feature of the embedded *C*. It then moves to the matrix SpecCP, checking the strong *+wh*-feature of its head.

(8) **What_i do you wonder [CP t_i C [IP John bought t_i (when)]]*

⁹What about partial *wh*-movement constructions like German (i)?

- (i) Was glaubst du was Ede repariert hat?
 what believe you what Ede repaired has
 ‘What do you believe that Ede has repaired?’

Herburger (1994) provides strong evidence that the true *wh*-phrase in partial *wh*-movement constructions like (i) does not undergo LF *wh*-movement to the CP marked with *was*. (She shows that a partially moved *wh*-phrase cannot scope over the subject of the clause where *was* is located, in contrast to *wh*-phrases that move overtly to the SpecCP that is filled by *was* in partial *wh*-movement constructions.) This makes (1) irrelevant to (i). (Moreover, it is not clear that the position in which the *wh*-phrase is located in (i) should be treated as an operator position, which could also make (1) irrelevant to (i).)

¹⁰It may have some pragmatic effects, see Choi (1999).

¹¹But see Chomsky (2000) and den Dikken (2003) for a different view.

It is not clear how (8) can be ruled out (note that *when* can be interpreted in the embedded SpecCP, either through unselective binding or after LF wh-movement, so that the embedded clause can still be interpreted as a question).¹² In fact, it seems to be well-formed syntactically. Its ungrammaticality can then be taken to indicate that a wh-phrase cannot pass through an interrogative SpecCP even when that SpecCP is empty, which follows from (1). (*What* in (8) undergoes A'-movement after moving to a position where it can establish an operator-variable relation.)

2.5. *Topicalization*

Another relevant case is provided by Grohmann (2003). Grohmann argues that wh-movement cannot feed topicalization on the basis of constructions like (9), where the wh-phrase undergoes topicalization after wh-movement to SpecCP, with the comma intonation indicating a pause typically associated with topicalization structures.¹³

(9) *Who, does Mary detest?

Since the wh-phrase in (9) undergoes an operator-variable creating movement (topicalization) after another operator-variable creating movement (wh-movement to SpecCP), (9) is straightforwardly ruled out by (1).¹⁴

2.6. *Multiple wh-fronting*

A particularly strong argument for (1) is provided by multiple wh-fronting languages. It is often assumed that Bulgarian, a multiple wh-fronting language that places all fronted wh-phrases in SpecCP, does not display wh-island effects. The standard explanation for this (see Rudin 1988) is that, since Bulgarian allows more than one wh-phrase to be located in an interrogative SpecCP overtly, a wh-phrase can pass through an already filled interrogative SpecCP. This is in contrast to English, which disallows multiply-filled interrogative SpecCPs in overt syntax. As a result, a wh-phrase moving out of a wh-island in English is forced to skip the interrogative SpecCP, which results in a violation. Under the standard analysis,

¹²I am focusing here on Chomsky's (1995) system; see section 3 for discussion of wh-islands in Chomsky's (2000) system.

¹³The reader should assume a D-linked reading for *who*, see footnote 8. Note that the grammaticality of (i) indicates that the landing site of topicalization precedes SpecCP in matrix clauses.

(i) ?To Peter, what should Mary give?

¹⁴See Grohmann (2003) for an alternative account of (9) in terms of anti-locality.

Bulgarian raises a problem for (1). Since interrogative SpecCP is an operator position, once a wh-phrase moves to an interrogative SpecCP, (1) should prevent it from undergoing wh-movement. In this section I will show that Bulgarian, and multiple wh-fronting languages more generally, not only do not pose a problem for (1), they in fact provide a strong confirmation of it.

2.6.1. *Multiple wh-fronting and wh-islands*

Rudin (1988) argues that there are two types of multiple wh-fronting (MWF) languages: in one type, represented by Bulgarian, all fronted wh-phrases are located in SpecCP, while in the other type, represented by Serbo-Croatian (SC), only the first fronted wh-phrase is located in SpecCP. She thus argues that, in spite of the superficial similarity, Bulgarian and SC MWF constructions in (10)-(11) have very different structures.

- (10) Koj kakvo kupuva? (Bulgarian)
 who what buys
 ‘Who is buying what?’
- (11) Ko šta kupuje? (SC)
 who what buys

The structures Rudin assigns to the Bulgarian and SC examples in question are given in (12). On Rudin’s analysis, only in Bulgarian fronted wh-phrases form a constituent and only Bulgarian allows more than one wh-phrase to be located in SpecCP. (According to Rudin, *koj* moves first to SpecCP in (12), and *kakvo* then right-adjoins to it.)

- (12) a. [_{CP} [_{SpecCP} [_{SpecCP} Koj] kakvo] [_{C'} kupuva]]?
 b. [_{CP} Ko [_{C'} [_{IP} šta [_{IP} kupuje]]]]?

Rudin gives a number of arguments for the structural distinction between Bulgarian and SC multiple questions. The ones that we will be concerned with involve the possibility of splitting fronted wh-phrases with a parenthetical, sensitivity to wh-islands, and Superiority effects.

Rudin (1988) claims that SC allows parentheticals to intervene between fronted wh-phrases, which is not possible in Bulgarian.

- (13) Ko, po tebi, šta kupuje? (SC)
 who according-to you what buys
 ‘Who, according to you, is buying what?’

(14) ?*Koj, spored tebe, kakvo kupuva? (Bulgarian)
 who according-to you what buys

She argues that the impenetrability of fronted wh-phrases in Bulgarian indicates that they form a constituent in SpecCP.¹⁵ She interprets the possibility of lexical material occurring between fronted wh-phrases in SC as indicating that fronted wh-phrases in SC are not all located in SpecCP.

Rudin also observes that Bulgarian and SC differ with respect to Superiority effects, i.e. the ordering of fronted wh-phrases. Whereas the fronted wh-phrases in SC (11) are freely ordered (see (15)), in Bulgarian the nominative wh-phrase has to precede the accusative wh-phrase (compare (16) with (10)), which has been successfully analyzed in the literature in terms of Superiority.¹⁶

(15) Šta ko kupuje? (SC)

(16) *Kakvo koj kupuva? (Bulgarian)

Rudin provides an account of these data on which Superiority effects arise only when all wh-phrases move to SpecCP. (I will return below to an analysis of the Superiority effect.)

I now turn to an argument for Rudin's structure for Bulgarian and SC questions which directly concerns the generalization in (1). The argument involves extraction out of wh-islands. Rudin claims that Bulgarian allows, and SC disallows, extraction out of wh-islands based on constructions like (17).

¹⁵For an alternative, multiple Spec analysis, on which Bulgarian wh-phrases do not form a constituent, see Koizumi (1994), Richards (1997, 2001), and Pesetsky (2000). Although this is noted by the authors in question, under the multiple Spec analysis (14) can be ruled out due to a feature clash: a [-wh] element is located in an interrogative ([+wh]) projection. The impossibility of a parenthetical splitting wh-phrases then provides evidence that the fronted wh-phrases are located in SpecCP under both Rudin's and the multiple Spec analysis.

¹⁶See Rudin (1988), Bošković (1997a, 1999, 2002a), Richards (1997, 1998, 2001), and Pesetsky (2000), among others. One argument that the fixed order of the wh-phrases in (10)/(16) is a result of Superiority concerns the fact that (16) improves with D-linked (ia) and echo wh-phrases (ib). (Koj in (ib) is an echo wh-phrase.) The same happens with Superiority violations in English (ii). Notice that all the above-mentioned authors argue that the wh-phrase that is first in the linear order in Bulgarian multiple questions is the one that moves first, in accordance with Superiority. The second wh-phrase either right-adjoins to the first wh-phrase, located in SpecCP, as in Rudin (1988), or moves to a lower SpecCP (the first wh-phrase is located in the higher SpecCP), as in Richards (1997, 1998, 2001) and Pesetsky (2000). (Müller 2001 adopts multiple adjunction to CP, with the first wh-phrase being the highest adjunct. For another approach to Bulgarian MWF, see Grewendorf 2001 and Kim 1997.)

- (i) a. ?Koja kniga koj čovek kupuva?
 which book which man buys
 'Which book is which man buying?'
 b. ?Kakvo KOJ kupuva?
- (ii) a. Who bought what?
 b. *What did who buy?
 c. Which book did which man buy?
 d. What did WHO buy?

- (17) a. Vidjah edna kniga, kojato_i se čudja koj znae koj prodava t_i.
 saw-1s one book which-the refl wonder-1s who knows who sells
 ‘I saw a book which I wonder who knows who sells.’ (Bulgarian)
- b. *Vidio sam knjigu koju_i se pitam ko zna ko prodaje t_i.
 seen am book which refl wonder-1s who knows who sells
 ‘I saw a book which I wonder who knows who sells.’ (SC)

Rudin interprets the data in (17) as providing evidence that, in contrast to SC, Bulgarian allows more than one wh-phrase to be located in SpecCP in overt syntax. As a result, *kojato* in the Bulgarian example can escape the Wh-Island Constraint by moving through the embedded SpecCPs, occupied by *koj*. Since SC does not allow more than one wh-phrase in SpecCP overtly, the escape hatch from the Wh-Island Constraint is not available in SC.¹⁷

Under Rudin’s analysis, the data in question, in particular Bulgarian (17a), raises a problem for the generalization in (1). Since interrogative SpecCP is an operator position, once a wh-phrase moves to an interrogative SpecCP, (1) should prevent it from undergoing wh-movement. I conclude, therefore, that if Rudin’s analysis is correct, the insensitivity of Bulgarian to the Wh-Island Constraint raises a problem for (1).

It is worth noting here that Rudin’s way of voiding the wh-island effect in Bulgarian is abstractly very similar to (8), the only difference between (8) and the Bulgarian case being that in the Bulgarian case, the SpecCP through which the wh-phrase passes is already filled, which is irrelevant given that by hypothesis Bulgarian allows more than one wh-phrase in SpecCP in overt syntax. Given that the derivation in (8) clearly needs to be ruled out, it seems natural to conclude that Bulgarian wh-phrases should not be allowed to freely pass through a filled interrogative SpecCP.

The relevant facts regarding MWF and wh-islands are actually more complex than (17) indicates. In particular, it turns out that Bulgarian is not truly insensitive to the Wh-Island Constraint. Rudin herself notes that, in contrast to relativization, Bulgarian exhibits wh-island effects in questions. Rudin’s example in (18) illustrates this. Rudin also observes that (19), containing a D-linked wh-phrase, contrasts with (18). Based on this, Rudin concludes that questioning out of a wh-island in Bulgarian is allowed with D-linked, but not with non-D-linked wh-phrases. Notice, however, that for most speakers even extraction of a D-linked wh-phrase out of a wh-island is degraded if it involves extraction across another D-linked wh-

¹⁷Rudin claims that Bulgarian and SC also differ with respect to the possibility of multiple extraction of wh-phrases out of declarative clauses. However, all the speakers I have consulted find SC (i) acceptable.

- (i) Ko šta želite da vam kupi?
 who what want-2p that you buys
 ‘Who do you want to buy you what?’

phrase, as in (20).¹⁸

- (18) *Kakvo_i se čudiš koj znae koj prodava t_i?
what refl wonder-2s who knows who sells
'What do you wonder who knows who sells?'
- (19) ?Koja ot tezi knigi_i se čudiš koj znae koj prodava t_i?
which of these books refl wonder-2s who knows who sells
'Which of these books do you wonder who knows who sells?'
- (20) ?*Koja ot tezi knigi_i se čudiš koj čovek znae koj učitel prodava t_i?
which of these books refl wonder-2s which man knows which teacher sells
'Which of these books do you wonder which man knows which teacher sells?'

The literature on wh-islands in Bulgarian generally focuses on argument extraction and ignores adjunct extraction.¹⁹ Data concerning adjunct extraction flatly contradict the claim that Bulgarian is not sensitive to the Wh-Island Constraint. As shown in (21), extraction of adjuncts out of wh-islands leads to full unacceptability regardless of whether we are dealing with relativization or questioning. D-linking is also irrelevant.

- (21) a. **pričinata, poradi kojato_i [Ivan znae dali Boris e zaminal t_i]
reason-the for which Ivan knows whether Boris is left
'the reason for which Ivan knows whether Boris left'
- b. **Zašto/poradi kakva pričina znae [dali Boris e zaminal t_i]?
why for which reason knows whether Boris is left
'Why/for which reason does he know whether Boris left?'
- c. cf. Zašto/poradi kakva pričina misliš [če Boris e zaminal t_i]?
why for which reason think-2s that Boris is left
'Why/for which reason do you think that Boris left?'

These facts indicate that wh-islands are islands in Bulgarian. Consequently, any analysis that completely voids Bulgarian of the wh-island effect must be on the wrong track. Rudin's analysis, which ties the grammaticality of (17a) to the availability of MWF with multiply filled SpecCPs in Bulgarian, seems to

¹⁸Thanks are due to Cedric Boeckx for suggesting checking extraction out of D-linked wh-islands.

¹⁹Note that in the current theoretical system, traditional Subjacency and ECP violations (the former arising with extraction of arguments and the latter with extraction of adjuncts out of islands) are treated in essentially the same way (see Chomsky and Lasnik 1993, Takahashi 1994, Bošković and Lasnik 1999, among others).

incorrectly predict that Bulgarian should never exhibit wh-island effects, since a wh-phrase moving out of a wh-island should always be able to move through the filled interrogative SpecCP.

Note also that, as noted in Bošković (2003), Swedish, a language that does not allow MWF, behaves in exactly the same way as Bulgarian regarding sensitivity to wh-islands. Thus, on a par with Bulgarian, argument extraction out of wh-islands in Swedish is possible with relativization and D-linked questions, but not with non-D-linked questions (see Comorovski 1996:161-162). Furthermore, as in Bulgarian, D-linked questions do exhibit wh-island effects if the wh-island itself contains a D-linked wh-phrase in SpecCP. Again as in Bulgarian, extraction out of wh-islands is never possible with adjuncts. ((22a-b) are taken from Maling 1978:84, (22c) from Engdahl 1986:6, and (22d-e) from Bošković 2003.)²⁰

(22) a. *Vad frågade Jan vem som skrev?

‘What did John ask who wrote?’

b. Det är melodin, som Jan frågade vem som skrev.

‘This is the song that John asked who wrote.’

c. Vilken film var det du gärna ville veta vem som hade regisserat?

‘Which film did you want to know who had directed?’

d. ?*Vilken film var det du gärna ville veta vilken skådespelare som hade regisserat?

‘Which film did you want to know which actor had directed?’

e. **Varför/av vilket skäl undrar han [vem som lagade bilen t]?

‘Why/for which reason does he wonder who fixed the car?’

f. **orsaken varför han undrar [vem som lagade bilen t]

‘the reason why he wonders who fixed the car’

The fact that Bulgarian, a MWF language, and Swedish, a non-MWF language, exhibit exactly the same behavior with respect to sensitivity to wh-islands, a pattern which I will refer to below as selective wh-island insensitivity, indicates that an analysis that crucially relates the possibility of extraction out of wh-islands in certain contexts in Bulgarian to the availability of MWF is on the wrong track.²¹

²⁰As in Bulgarian, where extraction out of a wh-island is possible in Swedish, it can take place out of more than one wh-island (see Engdahl 1986). Notice also that adjuncts can be extracted long-distance out of declarative complements in Swedish.

²¹Although Bulgarian and Swedish exhibit uniform behavior with respect to the sensitivity to wh-islands (i.e. when the wh-island effect can be voided), there are other aspects of wh-island constructions where the two languages do not appear to pattern together. Thus, Richards (2001) shows that Bulgarian often prefers crossing to nesting paths with extraction from wh-islands, while Swedish appears to prefer nesting paths. (The situation regarding Swedish is actually not completely clear; see Engdahl 1986:128-129, who notes that Swedish sometimes allows crossing paths.) While the phenomenon in question is rather interesting, as the illuminating discussion in Richards (2001) indicates, whether a language prefers crossing or nesting paths does not seem to pattern with (in)sensitivity to wh-islands, a phenomenon under investigation here. Thus, English and Swedish

A strong confirmation of this conclusion is provided by examination of other languages that exhibit selective wh-island insensitivity. Selective wh-island insensitivity is displayed by Romanian, a MWF language that belongs to the same MWF type as Bulgarian (see Rudin 1988) and is therefore expected to pattern with Bulgarian under Rudin’s analysis. However, it is also displayed by Icelandic, Norwegian, Hebrew, and Albanian, all of which are non-MWF languages but behave like Swedish and Bulgarian with respect to wh-islands.²²

(23) a. Lexova një libër të cil-in pyes veten se kush e mori në bibliotekë. (Albanian)

‘I read a book which I ask myself who got from the library.’

b. Cil-ët libra pyet veten se kush shet?

‘Which books do you ask yourself who sells?’

c. *Çfarë pyet veten se kush shet?

‘What do you ask yourself who sells?’

d. **motivi pse/për të cilin Ivani (e) di [nëse Borisi iku t]

‘the reason why/for which Ivan knows whether Boris left’

(24) a. Am văzut o carte pe care mă întreb cine o vinde. (Romanian)

‘I saw a book which I ask myself who sells.’

b. (Pe) care cărți te întrebi cine le vinde?

‘Which books do you ask yourself who sells?’

c. *Ce te întrebi cine vinde?

prefer nested paths, and Bulgarian and SC prefer crossing paths (see Richards 2001 regarding SC). As discussed in the text, only Swedish and Bulgarian allow fully acceptable extraction out of wh-islands in examples like (17a) and (19). (Other languages discussed directly below where examples like (17a) and (19) are acceptable also do not behave consistently with respect to the nested vs crossing paths distinction.) Moreover, Bulgarian (17a) actually involves nested paths. (The same holds for (19). Richards does provide an account of examples like (19). However, the account appears to incorrectly extend to (20), predicting it to be as acceptable as (19).) At any rate, what kind of paths are (often) preferred and whether the preferred path (or any path) can yield a fully acceptable result with, e.g., relativization out of wh-islands seem to be independent properties. I am focusing on the latter property here, leaving the former, which certainly deserves more attention due to its inherent interest, for future research.

²²OK/** are used to indicate a three-way distinction, ** corresponding to the traditional Subjacency/ECP strength violations. For some relevant discussion of Romanian, see Comorovski (1986), for Hebrew Reinhart (1981), and for Icelandic and Norwegian Maling (1978). (The authors in question do not discuss the full paradigm under investigation here.) Note also that, like Bulgarian and Swedish, the languages in question also allow extraction out of more than one wh-island. My informants disagree regarding extraction of D-linked wh-phrases out of D-linking wh-islands in the languages in question. Such extraction seems to be degraded (i.e. worse than extraction of D-linked wh-phrases out of non-D-linking wh-islands) in Romanian and Albanian, but acceptable in Icelandic and Norwegian (the situation is less clear in Hebrew, where there seems to be some speaker variation). Notice also that the relativization strategy employed in Albanian (23a) and Romanian (24a) as well as questioning of D-linked wh-phrases in Romanian (24b) quite generally require the presence of a resumptive pronoun. However, the resumptivization is otherwise island-sensitive (e.g. such resumptivization into adjuncts yields a degraded sentence). Note finally that Norwegian *årsaken* ‘reason-the’ cannot combine with a relative clause.

‘What do you ask yourself who sells?’

d. **motivul pentru care Ivan știe [dacă a plecat Boris t]

‘the reason for which Ivan knows whether Boris left’

(25) a. rai'ti sefer Se ani toha mi moxer.

(Hebrew)

‘I saw a book which I wonder who sells.’

b. eyze sfarim ata tohe mi moxer?

‘Which books do you wonder who sells?’

c. *ma ata tohe mi moxer?

‘What do you wonder who sells?’

d. **ha-siba lama ivan yodea [ha-im boris azav t]

‘the reason why Ivan knows whether Boris left’

(26) a. ?Det er melodien som Jan spurte hvem som skrev.

(Norwegian)

‘This is the song that John asked who wrote.’

b. Hvilken film var det du gjerne ville vite hvem som hadde regisert?

‘Which film did you want to know who had directed?’

c. *Hva spurte Jan hvem som skrev

‘What did John ask who wrote?’

d. **Hvorfor/Av hvilken grunn lurte han på [hvem som laget bilen t]?

‘Why/for which reason does he wonder who fixed the car?’

(27) a. Þetta er lagið sem Jón spurði hver hefði skrifað.

(Icelandic)

‘This is the song that John asked who wrote.’

b. Hvaða mynd var það sem þú vildir gjarnan vita hver hefði stjórnað?

‘Which film did you want to know who had directed?’

c. *Hvað spurði Jón hver hefði skrifað?

‘What did John ask who wrote?’

e. **ástæðan fyrir því hvers vegna að hann spyr [hver hafi lagað bílinn t]

‘the reason why he asks who fixed the car’

While Bulgarian, Swedish, Romanian, Norwegian, Icelandic, Hebrew, and Albanian represent a rather diverse group of languages there is something that they have in common that differentiates them from languages like SC and English, which do not display selective wh-island insensitivity. It is not MWF, as one would expect under Rudin’s analysis of Bulgarian. Rather, what the languages in question have in common is affixal articles. This then leads me to posit the generalization in (28).²³

²³The article is a prefix in Hebrew, and a suffix in other languages under consideration.

Note also that another property that is clearly shared by all the languages exhibiting selective wh-island insensitivity

(28) Selective wh-island insensitivity is a property of languages with affixal articles

The above generalization strongly suggests that selective wh-island insensitivity should not be tied to a particular type of MWF.

Given that Bulgarian and Romanian, which display selective wh-island insensitivity, do have MWF, in fact the right type of MWF, to show conclusively that selective wh-island insensitivity has nothing to do with a particular type of MWF it would be necessary to show that there are MWF languages (of the right type) that do not show selective wh-island insensitivity. (Given the above discussion, we may expect such MWF languages not to have affixal articles.) Then we would have the following state of affairs: not only do non-MWF languages (with affixal articles) show selective wh-island insensitivity, but not all MWF languages (in particular, those without affixal articles) with the right type of MWF show it. It turns out that SC, which does not have articles at all, is exactly the right language to look at in this respect. Recall that, according to Rudin, while Bulgarian is a MWF language that places all fronted wh-phrases in SpecCP, SC cannot place more than one fronted wh-phrase in SpecCP. Two of the tests Rudin uses to support her analysis involve the parenthetical splitting effect and the Superiority effect. Notice, however, that Rudin runs her tests only with respect to matrix questions. As discussed in Bošković (2003), in embedded and long-distance questions SC behaves just like Bulgarian: fronted wh-phrases cannot be split by a parenthetical and Superiority effects emerge. This is illustrated for embedded questions in (29)-(31).²⁴ ((29)/(30) should be compared with (11)/(15) and (31) with (13).)²⁵

- (29) a. [Ko koga voli], taj o njemu i govori.
 who whom loves that-one about him even talks
 ‘Everyone talks about the person they love.’
 b. ?*[Koga ko voli], taj o njemu/o njemu taj i govori.

is that, in contrast to English, their articles do not have a fixed, unique position in the traditional NP, which can be taken to indicate that their articles are mobile, i.e. they undergo movement. The precise characterization of the article system of the languages under consideration will become important only in the appendix. What is important for us right now is that what languages exhibiting selective wh-island insensitivity have in common is a particular article system, not MWF.

²⁴The irrelevant echo-question reading is ignored. Note that I do not give indirect questions as examples of embedded questions because such questions involve an interfering factor. Indirect questions formally do not differ at all from matrix questions in SC. As a result, there is always a danger that they could be analyzed as matrix questions, with the superficial matrix clause treated as an adsentential. The problem does not arise with correlative constructions like (29) and existential constructions like (30), which also contain embedded questions (see Izvorski 1996, 1998). However, it is shown in Bošković (1997a) that when the interfering factor noted above is controlled for, indirect questions also exhibit Superiority effects.

²⁵The correlative example (31d) may be irrelevant since the wh-clause of the correlative does not tolerate the parenthetical in question regardless of its position. However, as noted in Bošković (2003), other material cannot intervene between the wh-phrases of the wh-clause of a correlative either.

- (30) a. (?)Ima ko šta da ti proda.
 has who what part you sells
 ‘There is someone who can sell you something.’
 b. *Ima šta ko da ti proda.
- (31) a. *Ima ko, po tebi, šta da mu proda.
 has who according-to you what part him sells
 ‘There is someone who, according to you, can sell him something.’
 b. *Ko, po tebi, koga voli, taj o njemu i govori.
 who according-to you whom loves that-one about him even talks
 ‘According to you, everyone talks about the person they love.’

Based on these facts, Bošković (2003) concludes that in embedded questions, SC switches to the Bulgarian MWF pattern, where all fronted wh-phrases are located in SpecCP (see below for an explanation why).

Recall now that SC always exhibits wh-islands effects. This is illustrated by (17b) and the examples in (32). (Given the above discussion, all the wh-phrases in (17b) and (32), which involve embedded and long-distance questions, move to SpecCP. Furthermore, as discussed above, embedded interrogative SpecCPs in (32) and (17b) can be multiply filled.) Notice also that, like (17b), (32a-b) are acceptable in Bulgarian:

- (32) a. *Kojе knjige_i ima ko da ti proda t_i?
 which books has who part you sells
 ‘Which books is there someone who can sell to you?’
 b. *Kojу od tih knjiga_i se pitaš ko prodaje t_i?
 which of these books refl wonder-2s who sells
 ‘Which of these books do you wonder who sells?’ (SC)
- (33) a. Kojа kniga_i ima koj da ti prodade t_i?
 which book has who part you sells
 ‘Which book is there someone who can sell to you?’
 b. Kojа ot tezi knigi_i se čudiš koj prodava t_i?
 which of these books refl wonder-2s who sells
 ‘Which of these books do you wonder who sells.’ (Bulgarian)

The SC data raise a serious problem for Rudin’s analysis. Recall that it is crucial for Rudin’s account of the contrast in (17) and (32)/(33) that Bulgarian allows more than one wh-phrase in interrogative SpecCP overtly, but SC does not. However, we have just seen that SC actually does allow more than one wh-

phrase to be located in an embedded interrogative SpecCP in overt syntax. Under Rudin's analysis, SC (17b) and (32) are then incorrectly expected to be grammatical. What we see here is that although SC allows more than one wh-phrase to be located in an embedded interrogative SpecCP in overt syntax, it cannot use this to escape a wh-island effect. In other words, contrary to what is standardly assumed (see Comorovski 1986, Rudin 1988, Koizumi 1995, and Richards 1997, 2001), the possibility of having more than one wh-phrase in SpecCP at S-Structure does not make freely available derivations in which a wh-phrase moves through a filled SpecCP to escape a wh-island effect.²⁶

We are then faced with the following state of affairs: Both SC and Bulgarian place all fronted wh-phrases in SpecCP in embedded questions; i.e. they allow more than one wh-phrase to be located in an embedded, +wh SpecCP in overt syntax. Still, they exhibit wh-islands effects. SC exhibits wh-island effects in all contexts, and Bulgarian exhibits them selectively: it allows extraction out of wh-islands only in the contexts where Swedish, Icelandic, Norwegian, Albanian, and Hebrew allow such extraction. Given that the languages in question are not MWF languages, I have concluded above that the selective insensitivity of Bulgarian to the wh-island constraint should not be tied to the possibility of MWF. Rather, it should be tied to the affixal status of its articles, a property which is shared by all languages exhibiting selective insensitivity to the wh-island constraint. I will therefore ignore the contexts in question in the discussion below, returning to them in the appendix, where I offer a proposal regarding how such contexts (more precisely, the descriptive generalization in (28)) can be handled.

The important question that we need to address now is the following: Why is it that SC and Bulgarian display wh-islands effects although they allow more than one wh-phrase to be located in embedded interrogative SpecCPs? Given Rudin's reasoning, if SC and Bulgarian wh-phrases were freely allowed to pass through filled SpecCPs, the wh-island constraint would be completely voided in the languages in question. Apparently, we need to prevent wh-phrases in the languages in question from freely moving through filled interrogative SpecCPs. Let us see how this can be done. There are three possibilities here:

- (a) Something goes wrong at the point when a wh-phrase moves into the Spec of a CP that already contains a wh-phrase in it in SC/Bulgarian.
- (b) Something goes wrong because at some point there are two wh-phrases located in an interrogative SpecCP in SC/Bulgarian.
- (c) Something goes wrong when a wh-phrase attempts to move out of an interrogative SpecCP in SC/Bulgarian.

The options in (a) and (b) seem to be non-starters. If we were to appeal to either (a) or (b) we would not be able to account for grammatical constructions like (29a), (30a) and (10), where, as discussed above,

²⁶Richards (1997, 2001) is actually an exception in that he does not predict that wh-islands should be voided in all cases. However, his analysis still does not appear to give us the right cut.

all fronted *wh*-phrases are located in SpecCP in overt syntax (cf. (31) and (14)). Apparently, SC and Bulgarian can move a *wh*-phrase into an already filled interrogative SpecCP, and can have more than one *wh*-phrase in an interrogative SpecCP. We are therefore left with the possibility (c). Notice now that the possibility (c) is in fact blocked by (1). Moreover, blocking the derivation in question by appealing to (1) does not have any undesirable consequences for (29a)/(30a)/(10): *wh*-phrases are still allowed to move to an already filled interrogative SpecCP, and multiply filled SpecCPs are still allowed in the languages in question. The only thing that (1) does is prevent a *wh*-phrase from undergoing *wh*-movement from an interrogative SpecCP, i.e. moving out of an interrogative SpecCP. By doing so, it closes a loophole that the availability of MWF in the languages in question created with respect to the Wh-Island Constraint, which would have incorrectly voided the *wh*-island effect in these languages. Appealing to (1) thus enables us to account for the sensitivity of SC and Bulgarian, MWF languages that allow multiply-filled embedded interrogative SpecCPs, to the Wh-Island Constraint. I conclude therefore that MWF languages not only do not raise a problem for (1), they in fact provide an empirical argument for it.

Recall also that Rudin's way of voiding the *wh*-island effect in Bulgarian is abstractly very similar to (8), the only difference between (8) and the Bulgarian case being that in the Bulgarian case, the SpecCP through which the *wh*-phrase passes is already filled, which is irrelevant given that by hypothesis Bulgarian allows more than one *wh*-phrase in SpecCP. Given that (8) clearly needs to be ruled out, I suggested above that we should not allow *wh*-phrases to freely pass through an interrogative SpecCP even in MWF languages. I have also provided additional empirical evidence to this effect. We have seen that (1) in fact provides a uniform account of (8) and Bulgarian/SC examples like (18), i.e. it rules out the derivations in question in the same way, a unification that seems desirable.

To summarize the discussion in this section, like the English data discussed in section 2.4., the data regarding *wh*-movement out of *wh*-islands in MWF languages indicate that *wh*-phrases should not be allowed to freely pass through an interrogative SpecCP. The desired result is straightforwardly accomplished by (1).²⁷

1.6.2. *Superiority effects with multiple wh-fronting*

²⁷We now need a new analysis of the selective lack of *wh*-island effects in Bulgarian which will not rely on the possibility of MWF with multiply-filled SpecCPs in Bulgarian. Rather, the fact that SC exhibits *wh*-island effects even in the contexts in which it allows MWF with multiply-filled SpecCPs while a number of non-MWF languages, all of which have affixal articles, behave like Bulgarian with respect to *wh*-islands suggests that the selective *wh*-island effect should be tied to the availability of affixal articles, not MWF. In the appendix I will offer a suggestion as to how the selective insensitivity of languages with affixal articles, including Bulgarian, to the Wh-Island Constraint can be accounted for. In section 3, I will offer a deduction of (1) based on a mechanism whose effects I will show in the appendix can be voided exactly in those cases where Bulgarian and other affixal article languages allow extraction out of *wh*-islands. In other words, the suggestion I will make is that the deduction of (1) given in section 3 leaves a loophole for *wh*-phrases in languages with affixal articles to pass through interrogative SpecCP in the contexts in which such languages display insensitivity to *wh*-islands.

I now turn to Superiority effects with MWF. Recall that Rudin argues that all fronted *wh*-phrases are located in interrogative SpecCPs in Bulgarian (see (12a)), while only the first fronted *wh*-phrase is located in an interrogative SpecCP in SC, other fronted *wh*-phrases being located in a lower position (see (12b)). In Bošković (1999, 2002a) I argue that there is even a deeper difference between Bulgarian and SC MWF constructions. In particular, I argue that SC (11) does not have to involve *wh*-movement at all, i.e. both *wh*-phrases can be located lower than CP.²⁸

One piece of evidence to this effect given in Bošković (1999, 2002a) concerns the order of fronted *wh*-phrases, which is standardly treated in terms of Superiority (see footnote 16). Recall that Bulgarian and SC differ in this respect. While in SC (11) and (15) the fronted *wh*-phrases are freely ordered, this is not the case with Bulgarian (10) with (16). As discussed in Bošković (1999, 2002a), given the claim that Bulgarian (10) and (16) but not SC (11) and (15) must involve *wh*-movement, which I take to be movement motivated by checking the +*wh*-feature of C, the seemingly different behavior of *wh*-movement in the two languages with respect to Superiority can be easily explained. Since SC (11)/(15) do not have to involve *wh*-movement, they do not exhibit Superiority effects. Since Bulgarian (10)/(16) must involve *wh*-movement they exhibit Superiority effects. Under this analysis, *wh*-movement in Bulgarian and SC is well behaved with respect to Superiority—whenever *wh*-movement takes place we get Superiority effects.

Bošković (2002a) argues that *wh*-fronting in MWF languages that does not involve *wh*-movement involves focalization.²⁹ As shown in Bošković (1999), focus movement is not sensitive to Superiority. I argue the different behavior of focus movement and *wh*-movement with respect to Superiority can be captured under the economy account of Superiority, on which superiority effects follow from the requirement that every feature be checked through the shortest movement possible. An important difference between focus and *wh*-movement in the languages under consideration is that only one *wh*-phrase undergoes *wh*-movement (in constructions where *wh*-movement does take place), while all *wh*-phrases undergo focus movement. When it comes to *wh*-movement (i.e. movement motivated by checking the +*wh*-feature of C), only one *wh*-phrase needs to move, checking the strong +*wh*-feature of C. To check the feature through the shortest movement possible, it is always the highest *wh*-phrase that moves to check the +*wh*-feature of C. (The underlying assumption here is that movement to SpecCP triggers Spec-head agreement with C, checking its +*wh*-feature, which means the first *wh*-phrase that moves to SpecCP will invariably check the +*wh*-feature of C. This in turn means that unless the highest *wh*-phrase moves first the +*wh*-feature will not be checked in the most economical way.) With focus movement, we are dealing

²⁸The precise landing site is not important for our purposes—what is important is that it is lower than CP (for relevant discussion, see Bošković 1997b and Stjepanović 1999, 2003). Given the discussion of the role of focus in MWF below, we can assume that the landing site is in a focus projection below CP.

²⁹In this respect, note that (14) improves when the intervening parenthetical is contrastively focused (see Bošković 2003), the relevance of which is clear under the focus movement analysis of MWF (for relevant discussion, see also footnote 32).

with multiple movement to the same position since all wh-phrases undergo this movement in the languages in question. Regardless of the order of movements, the same number of nodes is always crossed, hence no order is preferred by economy (see Bošković 1999 for details of the analysis). To illustrate this with actual examples, (34a-b) involve only wh-movement, hence the highest wh-phrase moves to check the +wh-feature of C.

- (34) a. Who_i did John tell t_i that Mary bought what
 b. *What_i did John tell who that Mary bought t_i?

SC (11) and (15) involve pure focus movement. Since both wh-phrases have to undergo it, the focus requirement is checked in the same way in terms of nodes crossed regardless of the order of movement of the wh-phrases. In Bulgarian (10)/(16), one wh-phrase undergoes wh-movement. Moreover, both wh-phrases are licensed for focus by the interrogative C. When it comes to the focus requirement, the order of movement is irrelevant, as discussed above. However, to check the wh-feature of C in the most economical way, the highest wh-phrase must move first. (Recall that the first wh-phrase in the linear order is the one that moves first; this wh-phrase also checks the +wh-feature of C.) Note that since, in contrast to wh-movement, pure focus movement is not subject to Superiority, if there are three wh-phrases in a Bulgarian question, the order of the second and the third wh-phrase is expected to be free. The second and the third wh-phrase, which undergo pure focus movement, are indeed freely ordered, as shown by (35)-(36). The indirect object must move before the direct object when it is the highest wh-phrase before wh-fronting, as in (35), but not when it is not, as in (36), where the highest wh-phrase is *koj*.

- (35) a. Kogo kakvo e pital Ivan?
 whom what is asked Ivan
 ‘Who did Ivan ask what?’
 b. ?*Kakvo kogo e pital Ivan?
 (36) a. Koj kogo kakvo e pital?
 who whom what is asked
 ‘Who asked who what?’
 b. Koj kakvo kogo e pital?

Consider now SC constructions that involve overt wh-movement. It turns out that these constructions provide more evidence for the necessity of (1). Recall that, as in Bulgarian, in the contexts in which SC must have wh-movement, all SC wh-phrases move to SpecCP. That is, SC behaves just like Bulgarian in such constructions. This means that one wh-phrase undergoes wh-movement, checking the

strong +wh-feature of C, and other wh-phrases undergo focus movement. Since all wh-phrases are located in SpecCP, this means that C can license wh-phrases for focus in SC, just as in Bulgarian. As discussed above, wh-movement is sensitive to Superiority, while focus movement is not. As a result, the highest wh-phrase must move first to SpecCP, the order of movement of other wh-phrases being free.³⁰ Recall, however, that SC also has the possibility of licensing wh-phrases for focus in a lower position. This possibility is, for example, realized in (11) and (15), which do not have to involve overt wh-movement at all. The question now arises why SC wh-phrases in wh-questions that must involve overt wh-movement cannot undergo focus movement to the focus position below C, which would be followed by wh-movement of one wh-phrase to SpecCP.

We want to rule out this derivation for two reasons. First, given that focus movement is not sensitive to Superiority, the wh-phrases could be freely ordered in the focus projection. It appears then that we would have no way of ensuring the existence of Superiority effects in the contexts in question. In other words, in the derivation in question, focus movement would provide an escape hatch from Superiority effects even in the contexts where wh-movement must take place in SC, which, as shown above, do display Superiority effects. Second, under this derivation it would be difficult to account for the fact that it is more difficult to separate SC wh-phrases by a parenthetical in the contexts that involve wh-movement than in those that do not (cf. the contrast between (13) and (31)).

I conclude, therefore, that the derivation in which focus movement feeds wh-movement needs to be blocked. (1) in fact straightforwardly blocks the derivation in question. Under this derivation, a wh-phrase first undergoes focus movement, which I assume is A'-movement that creates an operator-variable chain. The wh-phrase then undergoes wh-movement, in violation of (1).³¹ By ruling out the possibility of focus movement feeding wh-movement, (1) ensures the desired result: although in principle SC wh-phrases can be checked for focus either in SpecCP or in a position lower than C, the latter option is blocked in constructions involving wh-movement.

The upshot of this analysis is that whenever a question involves true wh-movement in SC, i.e. whenever a wh-phrase must move to the interrogative SpecCP to check the wh-feature of C, the C also must be the focus licenser. Licensing wh-phrases for focus in a lower position in such constructions, which is otherwise an option in SC, would violate (1). We thus account for the switch to the Bulgarian paradigm in constructions in which SC must have wh-movement. We also explain why SC and Bulgarian appear to differ with respect to which elements license wh-phrases for focus. Using a focus licenser lower than C in Bulgarian questions would never give a legitimate result, since it would result in a violation of

³⁰As expected, SC exhibits selective Superiority effects in the contexts in question, just like Bulgarian: the highest wh-phrase must move first, while the order of movement of other wh-phrases is free (see Bošković 2003).

³¹Grohmann's (2003) approach to anti-locality, which bans movement that is too local (see Grohmann 2003 for precise definitions), would also rule out the derivation in question in some cases. (As far as I can tell, it would not rule it out in the cases where the landing sites of focus and wh-movement are in different clauses.)

(1). (It would involve movement of a wh-phrase from the focus position to the interrogative SpecCP.) In SC, this is a possibility in questions that do not involve overt wh-movement.

In fact, there is evidence that SC and Bulgarian do not differ in this respect. Bošković (2002a) shows that even echo wh-phrases must undergo focus movement in the languages under consideration, (37a-b) being unacceptable even on the echo reading of *what*.³²

- (37) a. ?*Ivan kupuje ŠTA? (SC)
 Ivan buys what
 b. ?*Ivan e kupil KAKVO? (Bulgarian)
 Ivan is bought what

As is well-known, echo questions do not have to involve overt wh-movement even in obligatory wh-movement languages such as English. Given this, if Bulgarian in principle had the possibility of licensing wh-phrases for focus in a position lower than CP we would expect the possibility to be taken advantage of in echo questions. Since wh-movement does not have to take place in such constructions, licensing of a wh-phrase for focus in a lower position would not lead to a violation of (1). The possibility is indeed realized, as shown in (38), where the fronted echo wh-phrase is clearly located lower than SpecCP.

- (38) Ti misliš će KAKVO e kupil Ivan?
 you think that what is bought Ivan
 ‘You think that Ivan bought what?’

I conclude therefore that, like SC, Bulgarian has the option of licensing wh-phrases for focus in a position lower than SpecCP. In other words, Bulgarian has the same possibilities for licensing wh-phrases for focus as SC. This means that Bulgarian raises the same issue as SC: we need to block the derivation on which movement to the lower focus position, which would void Superiority effects, feeds wh-movement.

To summarize, we have seen in this section that (1) is needed to account for the distribution of Superiority effects in MWF languages; more precisely, to block the derivation on which wh-phrases undergo focus movement prior to undergoing wh-movement, which would incorrectly void the Superiority effect in MWF constructions that involve true wh-movement.

³²I am considering only the reading on which the echo question asks for repetition of what the questioner has not heard. Echo questions in situ are acceptable on the reading on which they express surprise. As discussed in Bošković (2002a), this can be straightforwardly accounted for under the focus movement analysis of wh-fronting in Slavic since the value of the echo wh-phrase is fully known to the speaker, as well as the hearer, on the surprise reading, but not on the request for repetition reading. Hence, the wh-phrase has to undergo focus movement only on the latter reading. (Note that focus represents new information.)

3. Deducing the operator freezing effect

In section 2 we have seen a number of empirical arguments for (1). In light of these arguments, I take the validity of (1) to be well-established. As it stands, (1) is a principle. Although (1) helps us rule out a number of constructions, being a principle it does not really explain their ungrammaticality. The goal of this section is to show that (1) can be deduced from independently motivated assumptions. In other words, I will demonstrate that (1) is actually a theorem. This will enhance the explanatory value of any account based on (1).

3.1. *The Activation Condition*

Chomsky's (2000, 2001a) Activation Condition will play a central role in deducing (1).³³ According to the Activation Condition, an element X can undergo movement only if it has an uninterpretable feature. In other words, X needs an uninterpretable feature to be visible/active for the operation Move. (Under Chomsky's analysis, the same holds for Agree; see the discussion below.) As an empirical argument for the Activation Condition, Chomsky points out that the Activation Condition rules out movement from a Case to a non-Case A-position, as in (39). (The predecessor of this analysis is Lasnik 1995.)

- (39) a. *the belief John_i to seem t_i knows French
b. *the belief John_i to seem to t_i Peter knows French

The relevant uninterpretable feature that makes an NP visible for A-movement, namely Case, is checked in the position of t_i in (39) for the NP *John*. The Activation Condition then prevents *John* from moving to the infinitival SpecTP.

Consider now how the Activation Condition is satisfied in acceptable constructions like (40a) under Chomsky's analysis of this construction (*u* indicates an uninterpretable feature, and *i* an interpretable feature).

- (40) a. John_i was arrested t_i.
b. T was arrested John
 *u*φ *i*φ
 EPP *u*C

³³It is argued in Bošković (2007) that the Activation Condition is itself deducible; if this is correct deducing (1) from the Activation Condition would mean deducing it from a theorem. The reader should bear this in mind.

The uninterpretable unvalued (i.e. unchecked) Case feature of *John* in (40) makes the NP visible for movement to SpecTP, which satisfies the EPP. T has unvalued uninterpretable ϕ -features, which are checked/valued by the NP *John*. As a reflex of this process, the Case feature of *John* is checked off (i.e. valued and deleted)—this occurs after *John* moves to SpecTP.³⁴ Since the Case feature of *John* in (39) is checked by the embedded finite T/preposition *to*, *John* cannot undergo A-movement outside of the embedded finite TP/*to*-headed PP without violating the Activation Condition.³⁵

Let us now turn to wh-movement. Chomsky suggests a uniform account of wh-movement and A-movement. Consider (41).

(41) a. I wonder what John bought.

b. C John bought what

<i>u</i> Q	<i>i</i> Q
EPP	<i>u</i> Wh

Chomsky proposes that the wh-phrase has an interpretable Q-feature and an uninterpretable wh-feature. The latter makes the wh-phrase visible for wh-movement to SpecCP, which checks the EPP feature of the interrogative C. The uninterpretable Q-feature of the C undergoes checking with the interpretable Q feature of *what*, and the uninterpretable wh-feature of *what* is checked as a reflex of this checking relation.³⁶ This system immediately accounts for one case that motivated the postulation of (1), namely, it accounts for the impossibility of wh-movement out of an interrogative SpecCP. We have seen that the derivation on which a wh-phrase moves to an interrogative SpecCP and then undergoes wh-movement from this position needs to be blocked, otherwise, wh-movement out of wh-islands in MWF languages

³⁴Chomsky simply assumes that Case is a reflex of ϕ -feature checking. Similar correlations between features need to be made with respect to other features discussed below (e.g. Chomsky assumes a similar relation between the wh and the Op features discussed below).

³⁵Regarding quirky subject constructions in languages like Icelandic, Chomsky (2000:127) (see also Bejar and Massam 1999, Belletti 1988, Bošković 2002b, 2007, Cowper 1988, Frampton and Gutmann 1999, Freidin and Sprouse 1991, and Williams 2006) assumes that quirky subjects have a structural Case, which is not morphologically realized, on top of their inherent Case (the inherent Case is checked before any relation with T is established). This structural Case makes them visible for movement to SpecTP. (Note that structural Case and inherent Case may need to be treated as different properties for the purpose of the condition proposed in footnote 41, which does not seem implausible given the θ -association of the former.)

³⁶Notice that given Hiraiwa's (2005) multiple Agree, which allows a head to undergo Agree with more than one XP, voiding some potential intervention effects, even English wh-phrases in-situ (as in, e.g., *What did Mary give to whom?*) could have the Op feature, which would be checked by the interrogative C head. (As discussed below, the deduction of (1) to be proposed below goes through even if traditional LF movement is replaced by Agree.) Richards's (1997, 2001) Principle of Minimal Compliance can be used to ensure that no locality violation occurs if the wh-phrase in situ is separated by a CP boundary (or an island) from the relevant C, which would undergo locality obeying feature-checking with the wh-phrase that moves to its Spec (for some relevant discussion, see also Bošković 2007, who argues that some locality restrictions that constrain Move (for example the Phase-Impenetrability Condition) do not constrain Agree).

and movement out of interrogative CPs with unfilled Specs in English would be incorrectly allowed. The two cases in question are straightforwardly ruled out by the Activation Condition. In both cases in question a *wh*-phrase moves to an interrogative SpecCP. In the English case, there is nothing in SpecCP before the *wh*-phrase moves to this position, while in the MWF case the SpecCP is already filled by a *wh*-phrase. However, this is irrelevant given that the MWF languages in question allow more than one *wh*-phrase in the relevant SpecCP. What makes the *wh*-phrase visible for movement to the interrogative SpecCP is the *uWh* feature of the *wh*-phrase. However, the *uWh* feature of the *wh*-phrase is checked off by the interrogative *C*.³⁷ This means that the *wh*-phrase cannot undergo *wh*-movement from the interrogative SpecCP without violating the Activation Condition. *Wh*-movement from an interrogative SpecCP is then blocked by the Activation Condition. The Activation Condition thus accounts for one case that motivated the postulation of (1), i.e. it partially deduces the generalization in (1).

Can the Activation Condition account be extended to other cases that motivated the postulation

³⁷What about successive cyclic movement cases like (ia), where *what* passes through the embedded SpecCP? Pushing the parallelism between *wh*- and A-movement, Chomsky treats successive cyclic *wh*-movement in the same way as successive cyclic A-movement, illustrated by (ib).

- (i) a. What_i do you think [_{CP} t_i that Mary bought t_i]
 b. Mary_i seems [_{IP} t_i to know t_i French]

Regarding the latter, Chomsky proposes that, in contrast to finite T, nonfinite raising T is defective in that it cannot check off (i.e. value and delete) the Case feature of an NP, which means that the uninterpretable Case feature that makes an NP visible for A-movement survives movement to the Spec of a raising infinitival T. The NP can then move from this position to the Spec of a finite T without violating the Activation Condition. On a par with this treatment of successive cyclic A-movement, Chomsky suggests that, like the raising infinitival T, the intermediate declarative complementizer *that* is defective in that it cannot check off, i.e. value and delete, the uninterpretable *wh*-feature of a *wh*-phrase. Since the *wh*-phrase bears *uWh* even after movement to the embedded SpecCP in (ia), it can undergo *wh*-movement from this position without violating the Activation Condition.

It may actually not be necessary to assume that intermediate heads are defective in that they are unable to check off the relevant uninterpretable feature. Bošković (2002b) and Boeckx (2003) argue for a return to the Chomsky and Lasnik (1993)/Takahashi (1994) approach to successive cyclic movement (see also Chomsky 2005), on which successive cyclic movement is driven by the need to minimize chain links—it has nothing to do with intermediate heads and does not involve any feature checking with intermediate heads. Under this approach, the basic syntactic operation on which syntactic conditions like Cycle and Last Resort are stated is Form Chain, creation of intermediate links of successive cyclic movement being licensed by the Chain-internal Minimize Chain Links requirement that is independent of feature checking. Under this approach, it is natural to assume that the Activation Condition applies to the Form Chain operation, not to formation of particular links. Regarding (i), this means that the Activation Condition would be relevant only to the final target of movement, matrix SpecCP in (ia) and matrix SpecIP in (ib), movement through the intermediate SpecCP/SpecIP being licensed by the Minimize Chain Links principle with no feature checking with the embedded *C/I*. Under this approach, it is not necessary to stipulate defectiveness of the intermediate *C/I* with respect to feature checking since the heads in question are not involved in any feature checking in the first place. (The standard assumption under this approach was that agreeing heads, such as the +*wh* *C* in Bulgarian, obligatorily trigger agreement, which should then lead to the checking of the relevant feature of the *wh*-phrase.) The reader is also referred to Bošković (2007) for another approach where Chomsky's defective intermediate heads are not involved in feature checking at all (hence the defectiveness does not have to be stipulated), which however does not require assuming Form Chain (see Heck and Müller 2003 for a similar approach within the OT system).

of (1)? I believe that it can. I will demonstrate now that given a rather straightforward modification of Chomsky's account of (41), the Activation Condition account can be extended to all the cases that motivated the postulation of (1), which means that (1) is fully deducible from the Activation Condition. This in turn means that there is no need to postulate (1) as an independent principle of the grammar, i.e. the generalization in (1) is a theorem.³⁸

3.2. *Deducing the operator freezing effect*

Let us now consider in more detail the wh and the Q features involved in the wh-C/wh-phrase checking relation. The wh-feature was standardly taken before Chomsky (2000, 2001a) to be the specific feature involved in the checking relation between the wh-C and the wh-phrase, with both of these elements bearing this feature. Let us keep this assumption.³⁹ What could Q then be? I take Q to be a more general, operator-type feature, shared by elements undergoing operator-style movements. Accordingly, I will refer to it as Op. In Chomsky's (2000, 2001a) system, one feature should be shared by both elements involved in the checking relation, the feature in question being uninterpretable on the target (in the cases currently under consideration the target also has the EPP property), and interpretable on the lower element. In accordance with the Activation Condition, the lower element also has a different uninterpretable feature, which makes it visible for movement and which is checked off as a reflex of the primary checking relation between the target and the lower element.⁴⁰ Focusing now on the wh-C/wh-phrase checking relation, it seems natural to assume that it is the more specific wh-feature that is involved in the primary checking relation rather than the more general Op feature. Recall that the target is specified only for the feature involved in the primary checking relation. The way to specify the target as a wh-head is then to assume that the wh-feature is involved in the primary checking feature. (Taking the Op feature to be involved in the primary feature checking would imply treating the target of wh-movement as a general

³⁸Chomsky (in press) (see also Rizzi 2006) argues that A'-movement from a derived A-position is also impossible, which would mean that feature-checking A-movement also cannot feed feature-checking A'-movement. Due to the rather controversial status of this claim (the same holds for some of the data Chomsky gives to support the claim, like extraction from various subjects), I will not discuss it here. The reader is, however, referred to Bošković (in press b), where I show that the current Activity Condition based account of (1), i.e. the ban on feature-checking A'-movement feeding feature-checking A'-movement (see the discussion below), can be extended to the case of feature checking A-movement feeding feature checking A'-movement, if it turns out that the latter indeed needs to be blocked.

³⁹I am thus suggesting a return to Chomsky's (1995) position in this respect. As should become obvious during the discussion below, the current approach is actually a combination of Chomsky (1995) and Chomsky (2000, 2001a), since it takes the value of the wh-feature from Chomsky (1995) but also adopts Chomsky's (2000, 2001a) two-feature/Activation Condition analysis. As we will see below, the combination of Chomsky (1995) and Chomsky (2000, 2001a) deduces (1) in its entirety, which neither Chomsky's (1995) nor Chomsky's (2000, 2001a) system are able to do.

⁴⁰The uninterpretable feature in question does not disappear before the relevant movement takes place; see Chomsky (2000, 2001a) for details of the analysis.

operator head rather than a more specific *wh*-(i.e. question-) head, which may make differentiating different types of operator movement difficult.) The more general *Op* feature will then be what makes the *wh*-phrase visible for movement (and the *Agree* relation). The feature is checked off as a reflex of the *wh*-checking relation between the *C* and the *wh*-phrase. The relevant properties of a *wh*-*C* and a *wh*-phrase involved in *C/wh*-phrase feature-checking/*wh*-movement in English are then illustrated in (42).

- (42) *C* *wh*-phrase
 uWh *iWh*
 EPP *uOp*

The *wh*-feature checking relation in (42) is pretty much preserved from Chomsky's (1995) system. The more general *Op* feature is the innovation of the Activation Condition-based Chomsky's (2000, 2001a) system. When the *wh*-phrase in (42) undergoes *wh*-movement its *Op* feature is checked off by the *C*. Given the Activation Condition, the *wh*-phrase then cannot undergo another *wh*-movement. As discussed above, this means that the possibility of a *wh*-phrase undergoing *wh*-movement from an interrogative SpecCP is blocked, as desired. The blocking effect can now be easily made more general. In the system under consideration, it is natural to assume that it is the *Op* feature that makes a phrase visible for an operator-style movement. This means that once a phrase undergoes an operator movement, its *Op* feature will be deleted, as a result of which the phrase will not be able to undergo another operator movement, given the Activation Condition. The possibility of an operator-type movement feeding another operator-type movement is then blocked. But this is exactly what (1) was intended to do. As discussed in section 2, (1) prevents an instance of operator movement, for example, *wh*-movement, topicalization, or focalization, from feeding another operator movement (including its own reapplication). We have seen that this more general operator-movement blocking effect follows from the Activation Condition. To see this more clearly, consider again (42), together with the abstract representation of the elements involved in topicalization (43b) and focalization (43c).

- (43) a. *C* *wh*-phrase
 uWh *iWh*
 EPP *uOp*
 b. *Top* *topic*-phrase
 uTop *iTop*
 EPP *uOp*

- c. Foc focus-phrase
- u*Foc *i*Foc
- EPP *u*Op

When a phrase undergoes a checking relation with a *wh*-C/Top/Foc head and moves to SpecCP/SpecTopP/SpecFocP, its Op feature, which made it visible for movement to SpecCP/SpecTopP/SpecFocP, is deleted. Given the Activation Condition, the phrase then cannot undergo either *wh*-movement, or topicalization, or focalization.^{41 42}

What about the cases where the second operator movement is an LF movement, such as, for example, the cases from section 2 that involved quantifier raising?⁴³ A question that arises here is how LF movement dependencies should be treated. There are several options: One possibility is the traditional LF movement that follows overt movement. If this treatment of LF movement is adopted, the Activation Condition analysis can be easily extended to the LF movement cases. Another possibility for treatment of LF movement is movement before spell-out followed by a pronunciation of a lower copy (i.e. the copy in situ—see Fox and Nissenbaum 1999 for such a treatment of quantifier raising). The current analysis of the operator freezing effect can again be easily extended to this treatment of LF movement. The same

⁴¹A reviewer raises a question of why X bearing, for example, the [*wh*] and the [*top*] feature could not have two [*op*] features, which would allow it to undergo both *wh*- and topic movement, each of these movements deleting one [*op*] feature (see Rizzi 2006:113 for another case of this kind). This option can be straightforwardly blocked by adopting what seems to me to be a rather natural lexical redundancy rule: α can bear only one feature X. I am in fact unaware of any convincing cases of multiple presence of a single feature (with the same value) in any lexical item, so the [*Op*] feature would not be exceptional in the relevant respect. (Stowell's 1981 Case Resistance principle, which (put abstractly) bans assignment of feature X to a head that already lexically has X) might be relatable to the principle in question, though making an explicit connection would require some additional assumptions. Richards's 2006 Distinctness (though not its exact deduction), which roughly bans multiple things of the same type that are too close to each other (and in the relevant case they would in fact be in the same lexical item), may also be relevant here.)

⁴²As noted by a referee, the analysis adopted here is somewhat similar to an analysis that would not adopt the Activation Condition but would assume that X can bear only one of the features behind the movements considered above. To cover all the relevant cases, X could then bear only one of the following features: *wh*, *top*, *foc*, QR (or whatever is responsible for the QR movement), and the NPI feature. Given that most of these features do not seem to be semantically incompatible with each other a question arises why this would be the case. Also, the assumption is problematic empirically. Note, e.g., that indirect questions can undergo syntactic topicalization in Bulgarian and can be marked with the topic marker in Japanese. It appears that in this kind of cases the relevant C head would need to bear both the *top* feature and the *wh* feature. (Note that the relevant C head would need to have only one Op feature in the constructions in question in the current system. It is also worth noting that Müller 1998 proposes an interesting deduction of the putative incompatibility of the features in question. However, as far as I can tell the deduction cannot account for some of the relevant cases, e.g. (9) and the contrast in (6b)-(7).)

⁴³The discussion below can be straightforwardly extended to other cases involving LF movement from section 2. Note that if quantifier raising is treated as a movement operation in Chomsky's system (see below for an alternative), it would involve an X-feature agree relation between the target and the quantifier (I leave the precise nature of this feature open), and the presence of the uninterpretable Op feature on the quantifier, which would make the quantifier visible for movement (and the Agree relation, see the discussion below). The Op feature would be checked off as a reflex of the X-checking relation.

holds if LF movement takes place on the same cycle as overt movement, but differs from overt movement regarding the timing of spell-out (i.e. whether the structure is sent to spell-out before or after the movement in question), as in Chomsky (2001b) and Nissenbaum (2000). Finally, if LF movement dependencies are treated as pure Agree relations, i.e., if they do not involve actual movement, the Activation Condition account of (1) developed above can again be extended to the LF “movement” cases from section 2 given that, as argued in Chomsky (2000, 2001a), the Activation Condition constrains both Move and Agree.⁴⁴ I conclude therefore that the empirical effects of (1) follow from the Activation Condition.

4. Conclusion

I have argued for the generalization that an operator in an operator-variable chain cannot undergo further operator movement based on a failure of interaction between a number of operator-variable creating movement operations and shown that the operator freezing effect is deducible from the Activation Condition. I have also proposed a new generalization regarding the ability of some languages to violate the Wh-Island Constraint in certain contexts, which ties it to a property of D in the languages in question.

Appendix: On selective wh-island insensitivity

I now turn to an issue that was left open in section 2.6.1, namely the generalization in (28). As discussed there, a number of affixal article languages exhibit selective insensitivity to wh-islands: they allow extraction from wh-islands with argument relativization and questioning of D-linked argumental wh-phrases from non-D-linking wh-islands, but disallow it with questioning of non-D-linked wh-phrases, questioning of D-linked wh-phrases out of D-linking wh-islands, and quite generally, with adjunct extraction. SC and English, on the other hand, quite generally disallow extraction out of wh-islands. In this appendix I will make some preliminary remarks regarding what is responsible for the selective wh-island insensitivity of languages with affixal articles (see also footnote 23). I will argue that in the contexts where wh-phrases are allowed to move out of wh-islands in languages like Bulgarian and Swedish, the wh-phrase in fact passes through the interrogative SpecCP, in accordance with Chomsky’s (2000) Phase-Impenetrability Condition (PIC). However, its Op feature does not get deactivated. In other words, I will argue the Activation Condition account leaves a loophole for extraction from wh-islands exactly in the contexts where affixal article languages like Bulgarian and Swedish turn out to be insensitive to wh-islands. The escape hatch in question will be shown to be unavailable in SC and English, which do not

⁴⁴But see Bošković (2007).

have affixal articles. This state of affairs can be interpreted as an additional argument for the Activation Condition account; in fact a rather strong argument given that, as far as I know, there are no uniform alternative accounts of the selective insensitivity of Bulgarian and Swedish with respect to *wh*-islands, or, more generally, the generalization in (28).⁴⁵

In the spirit of the Abney (1987)/Postal (1966) pronouns-as-D analysis, I assume simple *wh*-pronouns like *who* and *what* are located in D. Furthermore, I assume D-linked *wh*-phrases have a special D-linking D, which may be responsible for the D-linking semantics. I will also assume that relativizers have a special relativizing D, which does not seem to be a radical step to take given well-known special properties of relatives (e.g. regarding pied-piping). The upshot of this is that in non-D-linking questions, the *wh*-word is the D-element (in fact, the only D element), while in D-linking questions and relatives, the *wh*-element is merged with a D-linking/relativizing D (possibly as its Spec), assumptions that do not seem implausible.⁴⁶ I assume that the above holds for all languages, not just languages with affixal articles. How can this help us void the *wh*-island effect for, e.g., Bulgarian and Swedish in certain contexts in a way that would not extend to SC and English? Recall that what Bulgarian and Swedish have in common which differentiates them from SC and English is affixal articles. Furthermore, in contrast to English, where the article, a prototypical D⁰, has a fixed position, Bulgarian and Swedish articles can occur on various parts of a complex NP, which I take to mean that they undergo movement (see, however, footnote 47). I also make the assumption that the affixal article gets to share the morphological features of the element it moves/affixes to, leaving open the exact technical implementation of this feature sharing via article affixation.⁴⁷ Now, the above discussion differentiates the D of D-linked *wh*-phrases and relatives from the D of non-D-linked *wh*-phrases. The former have a null D, independent from the *wh*-element. The

⁴⁵The analysis to be suggested below is, however, based on several assumptions whose status remains to be determined, which seems unavoidable given our current understanding of the phenomena under consideration.

⁴⁶D-linked *wh*-phrases and relative *wh*-pronouns in fact often co-occur with an overt (definite) article in the languages in question, while this never happens with non-D-linked *wh*-phrases. This can be interpreted as evidence that only D-linked and relative *wh*-pronouns co-occur with a D (the D being overtly realized in some, but not all languages considered in this section).

⁴⁷This could be a result of a more general condition on affixation, in which case we would be generalizing and strengthening here a proposal concerning host-affix feature agreement made in Lasnik (1995). In fact, in most of the languages under consideration articles overtly agree with their hosts. (I do not, however, assume that affixation is the only way such agreement can be accomplished.) Note also that I am interested here in definite articles, since indefinite articles have been argued to occur in a different position from definite articles; see Bowers 1987, Stowell 1989, and Bošković 2007, in press a.)

Affixal articles have attracted a great deal of attention in the literature on the languages in question (see, e.g. Delsing 1993, Julien 2002, Roehrs 2006, Santelmann 1993, and Vangsnes 1999 regarding Swedish and Fowler and Franks 1994, Franks 1998, Halpern 1995, Tomić 1996, and Saddock 1991 regarding Bulgarian), much of which assumes that in an example like Swedish *mann-en* ‘man-the’, either the noun moves to the article or the article moves to the noun (some authors assume movement of the nominal element preceding the article, followed by article movement to the noun). In this respect, notice that I use the term “article movement” strictly for ease of exposition. Exactly how the affixation of Swedish/Bulgarian articles is accomplished is not important for our purposes; what is important is the proposal regarding feature sharing between the affixal article and the noun. Another issue that does not crucially affect the current analysis is whether the article is generated in D or in a lower position (see, e.g. Delsing 1993, Julien 2002, Roehrs 2006, and Santelmann 1993 regarding the latter).

null D is basically a null article, which I assume behaves like other affixal articles in the languages in question. In fact, in Bulgarian relatives it is actually overt, and it is suffixed to the relative pronoun (see (17a)), which confirms that relative elements should have a D (in fact definite article) separate from the wh-pronoun. In Albanian the article is overt in relatives (see (23a)) as well as examples with D-linked wh-phrases (see (23b), where definite article *ët* is suffixed to *which* in *which books*).

As discussed above, the affixal article undergoes movement to the wh-phrase in the contexts in question,⁴⁸ sharing the features of the wh-phrase as a result of the movement/affixation. There are then two uninterpretable Op features in a relative/D-linked wh-phrase in affixal article languages like Bulgarian and Albanian: one in the wh-phrase and one in the D. I suggest that when a relative/D-linked wh-phrase moves to interrogative SpecCP in (44), the movement deletes one of these uninterpretable features.

- (44) a. Vidjah edna kniga, kojato_i se čudja koj prodava t_i.
 saw-1s one book which-the refl wonder-1s who sells
 ‘I saw a book which I wonder who knows who sells.’
- b. Koja kniga_i se čudiš koj prodava t_i?
 which book refl wonder-2s who sells
 ‘Which book do you wonder who sells?’ (Bulgarian)

I will assume that it has to delete the Op feature of the wh-phrase as a reflex of the wh-phrase checking the uninterpretable feature of the C.⁴⁹ However, the whole complex wh-phrase still remains active due to the presence of an uninterpretable Op feature on the D, which means the wh-phrase can move away from the interrogative SpecCP. As desired, the escape hatch from the wh-island effect discussed above is unavailable in non-relative/non-D-linking constructions like (45).

- (45) *Kakvo_i se čudiš koj prodava t_i?
 what refl wonder-2s who sells
 ‘What do you wonder who sells?’

The interesting thing about this analysis is that the wh-phrase actually passes through the interrogative SpecCP in (44).⁵⁰ However, we have seen that given the above assumptions, the Activity Condition

⁴⁸That a head can undergo movement in this configuration has been argued independently for different constructions in Bošković (2005) and Chomsky (1995:372) (see, however, footnote 47).

⁴⁹More precisely, the C undergoes Hiraiwa’s (2005) multiple Agree with two wh-phrases, both of which are then involved in checking the uninterpretable feature of the C.

⁵⁰One potential problem is that the above analysis may make possible derivations like (i).

deduction of (1) does not ban movement through interrogative SpecCP precisely in these contexts.

There are still a couple of issues that need to be addressed. What about examples like (46)?

- (46) ?*Koja ot tezi knigi_i se čudiš koj učitel prodava t_i?
which of these books refl wonder-2s which teacher sells
'Which of these books do you wonder which teacher sells?'

Why can't we use the above escape hatch when a D-linked wh-phrase moves out of a D-linking question? A number of authors have argued that the interrogative projection of D-linking questions is not quite the same as the one of non-D-linking questions (for relevant discussion, see Ordoñez 1997, Grohmann 1998, Reglero 2004, Krapova and Cinque 2003, among others). Suppose this is indeed correct, which would mean that an interrogative D-linking CP is headed by a special D-linking C. Given the often assumed DP/CP parallelism, this D-linking head would be the clausal counterpart of the D-linking D head of a D-linked wh-DP. Now, let us assume that when a D-linking C undergoes feature checking with a D-linked wh-phrase, as a result of the checking the C and the D have to be featurally identical, an assumption which may be relatable to the CP/DP parallelism. When whC undergoes feature checking with a D-linked wh-phrase, in principle it could check not only the Op feature of the wh-phrase, but also the Op feature of the D if the option of Hiraiwa's (2005) multiple Agree, which allows a head to check an identical feature on more than one element, is adopted. Given the above assumption, the D-linking C in (46) will in fact have to check the Op feature of the DP head. This completely inactivates the wh-phrase, banning movement of a D-linked wh-phrase from a D-linking CP. The contrast between (46) and (44b) is thus accounted for.

The above analysis allows D-linked and relative wh-phrases to move out of one wh-island in Bulgarian and Swedish (provided we do not move a D-linked wh-phrase out of a D-linking question).

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- (i) *Koja kniga_i se čudiš [_{CP} t_i wh-C Ivan prodava t_i?]
which book refl wonder-2s Ivan sells
'Which book do you wonder Ivan sells?' (Bulgarian)

There are two ways to proceed here: We can adopt a condition that would close the loophole for voiding the wh-island effect in this case. E.g., we can assume the uninterpretable feature of the C (possibly any probe's μK given Bošković's 2007 arguments that the concept of defective heads should be eliminated) can be checked and deleted iff the C completely inactivates at least one wh-phrase (i.e. a goal). In (i), the embedded C will then have to completely inactivate the wh-phrase, deleting μOp in both the wh-phrase and the D (as discussed below, in principle the C can check either only the Op feature of the wh-phrase or both the Op feature of the wh-phrase and the D). On the other hand, in (44) the condition in question can be met without complete inactivation of the D-linked wh-phrase, since the embedded C completely inactivates the wh-phrase that stays in its Spec. (Recall that the embedded C undergoes multiple Agree with both wh-phrases in (i)/(44). As a reflex of the Agree relation, μOp of the D-linked wh-phrase is checked. However, the above condition does not force checking of μOp of the D in (44), in contrast to (i).) Alternatively, we can assume (i) is ruled out independently of the issues under considerations here because a wh-question without a wh-phrase in its Spec cannot be properly interpreted in languages with overt wh-movement, as suggested in Chomsky (1995) (Saito's 1992 ban on wh-phrases occurring outside the question CP where they take scope would also rule out (i)).

However, it appears that, as it is, it would not allow movement out of more than one wh-island, since the remaining Op feature should get checked when a wh-phrase moves to an additional wh-island. However, as discussed above, the languages in question do allow extraction out of more than one wh-island.⁵¹ Let us see then how we can rule in such extraction. Recall that for Chomsky (2000), in *Who did Mary see?* the uninterpretable feature of *who* gets checked off as a reflex of the primary feature checking relation between the C and the wh-phrase. For Chomsky, the checking of the uninterpretable feature of goal Y that has made Y active for feature checking with probe X is quite generally obligatory; the relevant *uK* of Y cannot survive checking in (47). (I take it that this is what is meant by reflex feature checking.)⁵²

(47) X (*uF*) Y (*iF*, *uK*)

In the cases where a wh-phrase moves out of a wh-island in Bulgarian we have a different configuration for feature checking from the one given in (47). Here, a C undergoes checking with a wh-DP. However, different parts of the DP are involved in the checking: the wh-phrase has the relevant *iF* feature from (47), and the D has the relevant *uK* feature.

(48) X(*uF*) [_{wp} Y(*iF*) Z(*uK*)]

I suggest that in this configuration we do not have exactly the same kind of reflex checking as in (47). In particular, *uK* of Z can, but does not have to, get checked off. In other words, we have obligatory reflex checking only if both *iF* and *uK* belong to the same element. This means that the Op feature of D can survive feature checking with an intermediate C, enabling a D-linked/relative wh-phrase to move out of multiple wh-islands (the Op feature in question should be checked off in the final position).⁵³

Finally, let us address the question of why adjuncts cannot be moved out of wh-islands in selective wh-island languages even if the extraction involves relativization/D-linking. Examples with wh-elements like *why* are easy to account for. *Why* being a non-nominal, adverbial adjunct, the escape hatch for movement out of wh-islands discussed above, which crucially involves D, cannot be used. Things are

⁵¹This is in contrast to Italian, which is much more restrictive regarding extraction out of wh-islands than Bulgarian and Swedish, hence I assume it represents a different language type. In fact, Italian disallows not only extraction out of more than one wh-island, but also extraction out of a finite clause embedded under a single wh-island. (See Rizzi 1982. Note also that Rizzi's examples of acceptable extraction out of wh-islands in Italian generally involve pro-drop in the landing site clause.)

⁵²I put aside here the case of defective heads, which according to Bošković (2007) can anyway be dispensed with.

⁵³There should likely be a locality condition on how far apart Y and Z can be in (48). Note that in the case in question Y and Z form an adjoined complex and are located at the edge of the same phase (assuming that DPs are phases, as in Bošković 2005 and Svenonius 2004).

trickier with PP adjuncts, where a P takes a DP complement, as in (21a).⁵⁴ What we are dealing with here is feature percolation/pied-piping, where the relevant PP needs to count as a wh-phrase although the PP itself is not a wh-element. Furthermore, a μ K embedded within the PP needs to activate the PP for further movement out of a wh-island. It has been argued by several authors (see, e.g., Nishigauchi 1990 and Watanabe 1992) that adjuncts are more constrained than arguments with respect to pied-piping/feature percolation. These authors essentially argue that adjuncts cannot void islands through feature percolation/pied piping. I suggest appealing to this intuition here, leaving open its precise implementation. (One possibility regarding the case in question is that a μ K embedded within an adjunct PP cannot activate an adjunct PP which has itself become a wh-element via feature-percolation/pied-piping, acquiring one μ K this way.⁵⁵)

To sum up, the Activation Condition account captures the selective wh-island effect, where a language allows extraction out of wh-islands with relativization and D-linked wh-phrases moving out of non-D-linking wh-islands, but disallows it with non-D-linking wh-questions, D-linked wh-phrases moving out of D-linking wh-islands, and quite generally adjunct extraction. The strategy pursued here was to have the Activity Condition deduction of (1) leave a loophole for movement via interrogative SpecCP precisely in those contexts where the relevant languages allow extraction out of wh-islands. I have tied the ability of Bulgarian to selectively void wh-islands to a property of its articles. The previous accounts have tied it to the availability MWF. However, such accounts fail to extend to Swedish, Icelandic, Norwegian, Albanian, and Hebrew, all of which behave exactly like Bulgarian in the relevant respect, and incorrectly extend to SC, which otherwise allows multiply filled embedded interrogative SpecCPs. (Recall also that the accounts in question do not actually account for the full Bulgarian paradigm.) The current analysis is crucially based on a property that all selective wh-island languages have in common, which differentiates them from SC (and English), namely affixal articles. As a result, the analysis captures the generalization in (28). Note, however, that I assume having affixal articles is a prerequisite but not the only requirement for selective wh-island insensitivity. Given the ill-understood nature of the phenomenon, it would be presumptuous at this point to make a claim that this is the only requirement.

It is worth emphasizing that while the previous accounts of the different behavior of Bulgarian and English regarding wh-islands were all based on the assumption that the former allows, and the latter disallows, multiple Specs of CP, evidence for which was supposed to be provided by the availability of MWF, this is not the case under the current analysis. Under the most natural interpretation of the analysis,

⁵⁴Following Huang (1982) (see also Hsin 1997 for arguments for Huang's analysis), I assume that some potentially nominal adjuncts are actually complements of a null P.

⁵⁵Generalizing this to arguments as well as adjuncts would predict that even argumental PP extraction out of wh-islands would lead to degradation (even with relativization/D-linking). This actually is the case in several of the languages under consideration, namely Icelandic, Swedish, and Norwegian, where the above suggestion could then be the right move. However, Albanian, Bulgarian, Romanian, and Hebrew do allow argumental PP extraction out of wh-islands.

we would in fact expect multiple Specs of CP to be available in every language. There are several reasons why this aspect of the analysis is desirable. First, it enables us to account for Swedish, Norwegian, Hebrew, Icelandic, and Albanian, all non-MWF languages, which the previous analyses of Bulgarian fail to extend to. Second, it is actually hard to prevent the multiple Spec option in the bare phrase structure system. We would then expect it to be in principle available everywhere as long as independent factors do not interfere with it. It is in fact standardly assumed ν P allows multiple Specs. The option is very often employed. Given that the subject is generated in Spec ν P, object shift (which also lands in Spec ν P), or any movement out of ν P (including A'-movement, which is forced to pass through Spec ν P given the PIC), requires multiple Specs of ν P. The multiple Spec ν P option should then likely be universally allowed.⁵⁶ Regarding CP, I refer the reader to Bošković (2007), where it is shown that the option of multiple Specs of CP should even be available in English. More precisely, I show that there are constructions where more than one phrase moves out of the same CP in English, each of which should pass through SpecCP, given the PIC.

The multiple Spec option should then always be in principle available (at least for phase heads), though it is often blocked for independent reasons (but not because a particular head would quite generally disallow it). The above analysis confirms the correctness of this approach. In principle, Swedish, Bulgarian, English, and SC all allow wh-movement through filled SpecCP, i.e. creation of multiple CP Specs. Bulgarian and Swedish can use this to void the wh-island effect in certain contexts. Where the wh-island effect emerges, movement from an interrogative SpecCP is blocked because the relevant feature that would make the movement possible is checked off; in other words, the wh-phrase is inactivated. This is quite generally the case with English and SC. The analysis divorces the wh-island effect from the availability of MWF with multiply filled SpecCPs, which is desirable given that this kind of association would give us the wrong result: wh-islands would be voided in Bulgarian and SC, but not English and Swedish. While making a multiple Spec option in principle freely available to intermediate Cs seems desirable, we do not want to allow multiple wh-phrases to surface in the same CP in English and Swedish. In the overall approach adopted above, this option should in principle be available (we should not simply assume the C disallows creation of multiple Specs), which means we need an independent way of blocking it. Since providing a comprehensive account of this issue goes beyond the scope of this article, I merely refer the reader to two relevant works. One is Pesetsky (2000), who argues there is nothing wrong with true MWF in English syntactically. However, the presence of more than one wh-phrase in SpecCP in a final representation in English leads to a PF violation. The other work is Bošković (2007), where it is also suggested there is nothing wrong syntactically with MWF in English. However, the presence of more than

⁵⁶Note that for Chomsky (2001a), languages that disallow object shift do not disallow it because of the unavailability of the landing site for it (additional Spec ν P), but because object shift in such languages leads to other problems.

one wh-phrase in SpecCP in a final representation in English leads to a semantic violation.⁵⁷

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⁵⁷Another option, which is not really in line with the above approach where multiple Specs are always in principle available, is to assume that heads are lexically specified via the EPP feature for a merger with a Spec. However, EPP features can always be freely given to a phase head to allow successive cyclic movement (see Chomsky 2000, 2001a, 2005). Under this approach, intermediate, but not final heads would in principle freely allow the multiple Spec option. (This approach is also consistent with the Activation Condition analysis of the operator freezing effect and selective wh-island insensitivity.)

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