

On Multiple *Wh*-Fronting

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I show that multiple *wh*-fronting languages (MWFL) do not behave uniformly regarding *wh*-movement and eliminate MWFL from the crosslinguistic typology concerning *wh*-movement in multiple questions. Regarding when they have *wh*-movement, MWFL behave like non-MWFL: some behave like English (they always have *wh*-movement), some like Chinese (they never have it), and some like French (they have it optionally although, as in French, *wh*-movement is sometimes required). MWFL differ from English, Chinese, and French in that in MWFL even *wh*-phrases that do not undergo *wh*-movement still must front for an independent reason, argued to involve focus. The fronting has several exceptions (semantic, phonological, and syntactic in nature), explanation for which leads me to posit a new type of in-situ *wh*-phrase and argue for the possibility of pronunciation of lower copies of chains.

Keywords: multiple *wh*-movement, focus, echo questions, D-linking, Phonological Form, Superiority, *wh*-in-situ

It is standardly assumed that there are four language types with respect to possibilities for *wh*-movement in multiple questions. The English type (where only one *wh*-phrase moves), the Chinese type (where all the *wh*-phrases stay in situ),¹ and the French type (where both of these options are available) are illustrated in (1)–(3).

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¹ Malay may be a better example of a *wh*-in-situ language since, like Japanese (see Watanabe 1992), Chinese has been argued to involve overt null operator movement to Spec,CP in questions (see Cole and Hermon 1995). Cole and Hermon show that the null operator analysis does not work for Malay.

- (1) What did John give to who?
 (2) John gei-le shei shenme?
 John give-PERF who what
 ‘What did John give to who?’
 (3) a. Qu’ a-t-il donné à qui?
 what has-he given to who
 b. Il a donné quoi à qui?
 he has given what to who

French is often assumed to be a simple mixture of the first two types. This view is mistaken. If it were correct, both the English and the Chinese strategies would always be possible in French; that is, the set of possibilities for questions in French would be the union of the sets of possibilities for questions in English and Chinese. However, as shown in Bošković 1998a, 2000, the in-situ strategy has a very limited distribution in French, indicating that the French *wh*-in-situ is different from the Chinese *wh*-in-situ. Therefore, I assume that French is a separate type, not a simple mixture of English and Chinese. The relevant French data are given in (4). *Wh*-in-situ is allowed in matrix short-distance null-C questions (3b), but not in embedded, long-distance, or overt-C questions (4a,c,e). (See Bošković 1998a, 2000, for explanation of the limited distribution of *wh*-in-situ in French. The judgments are given for the true question reading. Note that overt-C questions are possible only in some dialects.)

- (4) a. *Pierre a demandé tu as embrassé qui.
 Pierre has asked you have kissed who
 b. cf. Pierre a demandé qui tu as embrassé.
 c. *Jean et Marie croient que Pierre a embrassé qui?
 Jean and Marie believe that Pierre has kissed who
 d. cf. Qui Jean et Marie croient-ils que Pierre a embrassé?
 e. *Que tu as vu qui?
 c you have seen who
 f. Qui que tu as vu?

The fourth type, multiple *wh*-fronting (MWF) languages, where all *wh*-phrases move, is illustrated in (5) from Bulgarian, where according to Rudin (1988) all *wh*-phrases move to Spec,CP overtly.

- (5) Na kogo kakvo dade Ivan?
 to who what gave Ivan
 ‘What did Ivan give to who?’

This article deals with MWF. In section 1 I argue that the MWF type should be eliminated from the above typology, languages considered to belong to this type being scattered across the first three types. In section 2 I show that there are several classes of non-MWF questions in MWF languages. This is a surprising fact given the discussion in section 1, and it will lead me to posit

a new type of in-situ *wh*-phrase not attested in English-, French-, and Chinese-type languages. Section 3 is the conclusion.

1 When MWF Languages Have *Wh*-Movement

1.1 Superiority Effects in MWF Languages

One argument that MWF languages are scattered across the English, French, and Chinese types with respect to when they must have *wh*-movement concerns Superiority effects, reflected in the order of fronted *wh*-phrases.² There are three types of MWF languages with respect to Superiority. Serbo-Croatian (SC) exhibits Superiority effects in some contexts, Bulgarian exhibits them in all contexts, and Russian never exhibits them. First consider SC. SC exhibits Superiority effects in embedded, long-distance, and overt-C questions, but not in short-distance null-C matrix questions.³

- (6) a. Ko koga voli?
 who whom loves
 ‘Who loves whom?’
 b. Koga ko voli?
- (7) 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.

² See Rudin 1988, Bošković 1997b, 1998b, 1999, Richards 1997, 1998, and Pesetsky 2000. One argument that the fixed order of *wh*-phrases in Bulgarian (ia–b) is a result of Superiority concerns the fact that (ib) improves with D-linked and echo *wh*-phrases. (*Koj* in (id) is an echo *wh*-phrase.) The same happens with Superiority violations in English (ii). All the above-mentioned authors argue that the *wh*-phrase that is first in the linear order in Bulgarian is the one that moves first. The second *wh*-phrase either right-adjoins to the first *wh*-phrase, located in Spec,CP, as in Rudin 1988, or moves to a lower Spec,CP (the first *wh*-phrase being located in the higher Spec,CP), as in Richards 1997, 1998, and Pesetsky 2000. For another approach to Bulgarian MWF, see Grewendorf 2001 and Kim 1997.

- (i) a. Koj kakvo e kupil?
 who what is bought
 ‘Who bought what?’
 b. *Kakvo koj e kupil?
 c. ?Koja knjiga koj čovek e kupil?
 which book which man is bought
 ‘Which man bought which book?’
 d. ?Kakvo KOJ e kupil?
- (ii) a. *What did who buy?
 b. Which book did which man buy?
 c. What did WHO buy?

³ I ignore the echo reading. I do not give indirect questions because of an interfering factor. Since they do not differ formally from root questions, they can easily be analyzed as root questions with the superficial root clause treated as an adsentential. The problem does not arise with correlatives (7) and existentials (9), which also contain embedded questions (see Izvorski 1996, 1998). In Bošković 1997c I show that when the interfering factor is controlled for, indirect questions also show Superiority effects.

- (8) a. ?Ko koga kažeš da je istukao?
 who whom say that is beaten
 ‘Who do you say beat whom?’
 b. *Koga ko kažeš da je istukao?
- (9) 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.
- (10) a. Ko li koga voli?
 who c whom loves
 ‘Who on earth loves whom?’
 b. *Koga li ko voli?

Notice that SC exhibits Superiority effects exactly where French requires *wh*-movement. Where French does not require *wh*-movement, SC does not exhibit Superiority effects.

Bulgarian exhibits Superiority effects in all contexts, including (6)–(10) (see also (41b)/(43b)).

- (11) a. Koj kogo običa?
 who whom loves
 b. *Kogo koj običa?
 c. Koj kogoto običa, toj za nego i govori.
 who whom loves he about him even talks
 d. *Kogoto koj običa, toj za nego/za nego toj i govori.
 e. Koj kogo kazvaš če e nabil?
 who whom say that is beaten
 f. *Kogo koj kazvaš če e nabil?
 g. (?)Ima koj kakvo da ti prodade.
 has who what PART you sells
 h. *Ima kakvo koj da ti prodade.
 i. Koj li kogo običa?
 who c whom loves
 j. *Kogo li koj običa?

Finally, as shown by Stepanov (1998), Russian has free order of fronted *wh*-phrases in all contexts. This is illustrated in (12) for the contexts in (6)–(9). (Notice that Russian does not allow *wh*-phrases in the *li*-construction and does not allow multiple questions in the *wh*-existential construction.)

- (12) a. Kto kogo ljubit?
 who whom loves
 b. Kogo kto ljubit?

- c. Kto kogo znaet, tot togo i poljubit.
 who whom knows that-one.NOM that-one.ACC and loves
 ‘Everyone will love the person they will know.’
- d. Kogo kto znaet, togo tot i poljubit.
- e. Kto kogo ty xočes, čtoby pobil?
 who whom you want that-SUBJ beat
 ‘Who do you want to beat whom?’
- f. Kogo kto ty xočes, čtoby pobil?

There is a parallelism in the behavior of English, French, and Chinese with respect to *wh*-movement and the behavior of the MWF languages with respect to Superiority: SC exhibits Superiority effects where French requires *wh*-movement, Bulgarian where English requires *wh*-movement (all contexts), and Russian where Chinese requires *wh*-movement (namely, never).⁴ This can be accounted for if SC, Bulgarian, and Russian behave like French, English, and Chinese with respect to when they require *wh*-movement, which I take to be movement motivated by checking the strong [+wh] feature of C: SC requires it in long-distance, embedded, and overt-C questions, but not in short-distance null-C matrix questions; Bulgarian requires it in all contexts; and Russian does not require it at all (see also Stepanov 1998 and Strahov 2000 for Russian). *Wh*-movement in MWF languages is then well behaved with respect to Superiority: SC, Bulgarian, and Russian exhibit Superiority effects whenever they must have *wh*-movement. The only difference between SC/Bulgarian/Russian and French/English/Chinese is that even *wh*-phrases that do not undergo *wh*-movement in the former group still must be fronted for independent reasons. That this movement is not driven by the strong [+wh] feature of C is confirmed by the fact that all *wh*-phrases must move in these languages, although movement of one *wh*-phrase should suffice to check the strong [+wh] feature of C. (I refer to this obligatory movement of *wh*-phrases that is independent of the strong [+wh] feature of C as *non-wh-fronting*.)

- (13) a. Ko šta kupuje? (SC)
 who what buys
 ‘Who buys what?’
 b. ?*Ko kupuje šta?
- (14) a. *Koj e kupil kakvo? (Bulgarian)
 who is bought what
 ‘Who bought what?’
 b. Koj kakvo e kupil?
- (15) a. *Kto kupil čto? (Russian)
 who bought what
 b. Kto čto kupil?

⁴ There is some variation with respect to the relevant data. Ljiljana Progovac (personal communication) informs me that in her judgment, SC patterns with Bulgarian. Léa Nash (personal communication) informs me that for her, Russian patterns with SC. (This holds for both Superiority and the data concerning the interpretation of multiple questions discussed below, which provides strong evidence for the current analysis.)

Even echo *wh*-phrases must move in these languages. (13b), (14a), (15a), as well as (16) are unacceptable even as echo questions (see also Wachowicz 1974 and É. Kiss 1987 for Polish and Hungarian), which confirms that *wh*-phrases in MWF languages front independently of the strong [+wh] feature of C.⁵

- (16) a. ?*Ivan kupuje šta? (SC)
 Ivan buys what
 b. ?*Ivan e kupil kakvo? (Bulgarian)
 Ivan is bought what
 c. ?*Ivan kupil čto? (Russian)
 Ivan bought what

Stjepanović (1998, 1999b) argues that the driving force for SC non-*wh*-fronting is focus, SC *wh*-phrases being inherently focused. She follows the line of work originating with Horvath 1986, where *wh*-fronting in a number of languages is analyzed as focus movement. This work makes a correlation between movement of *wh*-phrases and movement of contrastively focused non-*wh*-phrases,⁶ whereby a number of languages that overtly move non-*wh*-phrases with this type of focus are analyzed as having focus fronting of *wh*-phrases. (I will refer to contrastively focused non-*wh*-phrases simply as *focused*, this being the only type of focus for such phrases I am concerned with.) The analysis has been convincingly applied to, among other languages, Aghem, Basque, Hungarian, and Quechua (see, e.g., Horvath 1986, Rochemont 1986, É. Kiss 1995). Stjepanović shows that SC fits into this line of research. We have already seen that SC fronts all *wh*-phrases. It also fronts focused non-*wh*-phrases, given here in capitals.⁷

⁵ I am considering only the reading on which the echo question asks for repetition of what the questioner has not heard (see section 2.1 for another echo question reading). SC *Šta Ivan kupuje?* is thus ambiguous between the echo and the nonecho readings. Notice that one of my Bulgarian informants accepts (14a) and (16b). However, even for this speaker, echo *wh*-phrases in situ are better on the surprise echo question reading than on the request-for-repetition reading, in line with the discussion in section 2.1.

⁶ Contrastive focus, also referred to as identificational or narrow focus, expresses exhaustive identification and is accompanied by emphatic stress. It is important to distinguish it from simple new information focus, also referred to as wide or presentational focus. (For discussion of the two classes of foci, see É. Kiss 1998.)

⁷ Not all Slavic speakers obligatorily front focused non-*wh*-phrases. All my informants have this option. However, a few of them can also leave focused non-*wh*-phrases in situ. Most Slavic speakers have at least a strong preference for fronting them; for example, King (1993:105) claims that this is a strong tendency in Russian. (Stepanov (1998:461) claims such phrases must move in Russian.) We can decide to ignore the optional fronting pattern, since it is clearly dispreferred, perhaps for all speakers. If we don't, there are two ways to account for it. (I refer to it as *Variety I*.) We can posit a minor difference in the lexical specification of *wh*-phrases and focused non-*wh*-phrases by assuming that *wh*-phrases have a strong focus feature while focused non-*wh*-phrases can have either a strong or a weak focus feature in Variety I (see Kidwai 1999 for a similar proposal for Hindi/Urdu and Malayalam). There is a more principled alternative. There is an interesting similarity in the behavior of different types of *wh*-phrases in Malay and different types of focalized elements in Variety I. Malay argumental *wh*-phrases can either move or stay in situ. Cole and Hermon (1995) show that Malay argumental *wh*-in-situ does not involve null operator movement, as argued for Japanese by Watanabe (1992). They show that no *wh*-movement of any kind takes place in Malay argumental *wh*-in-situ. On the other hand, adjunct *wh*-phrases must move overtly. The gist of their analysis is that although in principle *wh*-movement is optional in Malay, adjuncts must move because they are uninterpretable in situ. The analysis can be applied to focus in Variety I. Suppose focus movement is in principle optional in Variety I. (The optionality can be a result of different lexical choices, as in Cole

- (17) a. JOVANA savjetuje.
 Jovan.ACC advises
 ‘(S)he advises Jovan.’
 b. ?*Savjetuje JOVANA.

Stjepanović provides convincing evidence, based on adverb placement, that focused non-*wh*-phrases and *wh*-phrases undergo the same kind of movement in SC. The focus movement analysis is applied to Bulgarian in Bošković 1998b, 1999, Izvorski 1993, and Lambova, in press; to Russian in Stepanov 1998; and to Romanian, also an MWF language, in Göbel 1998.⁸ I will also adopt it here. Notice, however, that my conclusions concerning when MWF languages require *wh*-movement are unaffected by the precise identity of the driving force for non-*wh*-fronting. However, below I provide three additional arguments for the focus movement analysis concerning D-linked and echo *wh*-phrases (section 2.1) and the distribution of parentheticals in questions (footnote 15). Before doing that, in the next section I present evidence concerning the interpretation of multiple questions that confirms the conclusion reached above based on Superiority with respect to when various MWF languages require *wh*-movement. (Another argument concerning Superiority is given in section 2.2.)

1.2 Interpretation of Multiple Questions

It is well known that a pair-list answer is obligatory for constructions like (18). (The observation is due to Wachowicz (1974). An exception to the observation concerning reversible predicates is explained away in Comorovski 1996:44.) Thus, (18) cannot be felicitously asked in the following situation: John is in a store and sees somebody buying an article of clothing, but does not see who it is and does not see exactly what the person is buying. He goes to the sales clerk and asks (18).

- (18) Who bought what?

Interestingly, single-pair answers are not crosslinguistically infelicitous with questions like (18). Thus, Japanese (19) can have either a single-pair or a pair-list answer, as observed by Mamoru Saito (personal communication). Unlike (18), it can be used in the situation described above.

and Hermon’s analysis.) Suppose furthermore that in MWF languages *wh*-phrases are interpretable only in the focus position. As a result, *wh*-phrases must undergo focus movement even in Variety I, where focus movement is in principle optional, since they would otherwise be uninterpretable.

⁸ Focus movement is insensitive to Superiority. In Bošković 1998b, 1999, where I provide an explanation for this fact, I show that this holds for Bulgarian as well as SC and Russian (see section 2.2). Slavic languages seem to differ arbitrarily regarding which elements license focus. This is not surprising since it is well known that there is considerable crosslinguistic variation regarding where focus is licensed under movement (see, e.g., É. Kiss 1995, especially p. 23). Focusing on Slavic, in Bošković 1997a I argue that in Bulgarian the focus licenser is interrogative C, in SC Agr and in some cases interrogative C. Izvorski (1993) and Lambova (in press) argue for a separate focus-licensing head below C for Bulgarian. Stjepanović (1999b) gives an analysis of SC with Agr_S and Pred as focus licensers. Stepanov (1998) argues that the focus licenser in Russian is Agr_S and King (1993) that it is Σ .

- (19) Dare-ga nani-o katta no?
 who-NOM what-ACC bought Q
 ‘Who bought what?’

Chinese and Hindi pattern with Japanese. German, on the other hand, patterns with English. An obvious difference between English/German and Japanese/Chinese/Hindi is that the former have overt *wh*-movement, whereas the latter are *wh*-in-situ languages; in other words, interrogative Spec,CPs must be filled overtly by a *wh*-phrase in English and German, but not in Japanese, Chinese, and Hindi. (I ignore the possibility of null operator movement, focusing on *wh*-phrases.) It is possible that overt movement to Spec,CP forces pair-list answers. French, which can employ either the in-situ or the *wh*-movement strategy, confirms the conjecture. Single-pair answers are possible in French, but only with in-situ questions. Thus, the in-situ question in (20a) can have a single-pair answer, which is not possible with (20b). (I discuss only nonsubject questions in French, where it is clear when *wh*-movement occurs.)

- (20) a. Il a donné quoi à qui?
 he has given what to who
 ‘What did he give to who?’
 b. Qu’a-t-il donné à qui?

The contrast between (20a) and (20b) strongly indicates that the availability of single-pair answers depends on the possibility of not moving any *wh*-phrase to Spec,CP overtly.⁹

Let us turn next to Slavic. As expected, Bulgarian, a language in which interrogative Spec,CPs are obligatorily filled by a *wh*-phrase overtly, patterns with English in that (21) requires a pair-list answer.

- (21) Koj kakvo e kupil?
 who what is bought
 ‘Who bought what?’

Significantly, SC patterns with languages in which *wh*-phrases need not move to Spec,CP overtly. Thus, SC (22) can have either a pair-list or a single-pair answer. This indicates that SC questions are well formed even when no *wh*-phrase moves to interrogative Spec,CP overtly.¹⁰

⁹ For an explanation of this, see Bošković, in press. Under the analysis given there, which is based on Hagstrom’s (1998) semantics of questions, languages that have obligatory overt movement of a *wh*-phrase to Spec,CP cannot license single-pair answers, while languages that do not have it can, but need not, allow such answers. In other words, not filling Spec,CP with a *wh*-phrase overtly is necessary but not sufficient for licensing single-pair answers.

¹⁰ Unfortunately, no definite conclusion can be drawn from examining contexts where SC requires overt *wh*-movement. The relevant test either cannot be carried out because of interfering factors concerning the interpretation of relevant constructions (this holds for correlative, existential, and *li*-constructions) or fails to give a clear result because of the murkiness of judgments (long-distance multiple questions, which are not very productive to start with). (The *li* counterpart of (18), *Ko li je šta kupio?*, cannot be used in the situation depicted with respect to (18). However, I hesitate to draw a strong conclusion from this since the *li*-construction is not a ‘neutral’ question semantically.) See, however, the discussion of topic constituents in section 2.1, which provides additional evidence for the claim made in this section.

- (22) Ko je šta kupio?
 who is what bought
 ‘Who bought what?’

Stepanov (1998) notes that Russian questions like (23) also allow single-pair answers, as expected.

- (23) Kto čto kupil?
 who what bought
 ‘Who bought what?’

Polish and Romanian confirm the analysis. Like SC and Russian, Polish does not show Superiority effects in short-distance null-C questions (see Rudin 1988), which means that it does not require overt *wh*-movement in such questions. On the other hand, Romanian shows Superiority effects (see Rudin 1988), which means that it has obligatory overt *wh*-movement, like Bulgarian and English.

- (24) a. Kto co kupił? (Polish)
 who what bought
 ‘Who bought what?’
 b. Co kto kupił?
- (25) a. Cine ce a cumpărat? (Romanian)
 who what has bought
 ‘Who bought what?’
 b. *Ce cine a cumpărat?

Significantly, Citko and Grohmann (2000) observe that a single-pair answer is possible with Polish (24a), but not with Romanian (25a), a strong confirmation of the current analysis (see Bošković, in press, and Citko and Grohmann 2000 for discussion of the interpretation of (24b)).

2 In-Situ *Wh*-Phrases in MWF Languages

In this section I show that there are some exceptions to the obligatoriness of *wh*-phrase fronting in MWF languages, a surprising fact in light of the above discussion. The exceptions can be classified into three groups: semantic, phonological, and syntactic. I start by examining semantic exceptions.

2.1 Semantic Exceptions to the Obligatoriness of *Wh*-Fronting in MWF Languages

One semantic exception involves D-linked *wh*-phrases, which can remain in situ, as shown in (26).¹¹

¹¹ This was noted by Wachowicz (1974) and Pesetsky (1987, 1989), who give Polish and Russian examples. (Pesetsky 1987, 1989 also mentions Czech and Romanian and Pesetsky 2000 Bulgarian.) In (13)–(15) I have used *wh*-phrases that are more difficult to D-link. Pesetsky and Wachowicz observe that noninherently D-linked *wh*-phrases can stay in situ when used in a context forcing a D-linked interpretation (those that in principle can be D-linked; see Pesetsky 1987:127 for an exception), which seems to hold for all the languages considered. Throughout the article I assume non-D-linked contexts for noninherently D-linked *wh*-phrases.

- (26) a. Ko je kupio koju knjigu? (SC)
 who is bought which book
 ‘Who bought which book?’
- b. Koj e kupil koja kniga? (Bulgarian)
 who is bought which book
- c. (?)Kakoj student pročitao kakuju knjigu? (Russian)
 which student read which book

The exceptional behavior of D-linked *wh*-phrases can be explained under the focus analysis. 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 its already being referred to in the discourse or being salient in the context. The range of reference of D-linked *wh*-phrases is thus discourse given. Because of their “discourse givenness,” such *wh*-phrases are not inherently focused, hence should not be subject to focus movement.¹² Note that some speakers prefer leaving D-linked *wh*-phrases in situ. Wachowicz (1974) notes this for Polish and Pesetsky (1987, 1989) for Romanian and Russian. Some speakers, however, can optionally front them. Thus, SC (27) is only slightly degraded. (Some Polish, Russian, and Romanian speakers also allow their languages’ counterparts of (27).)¹³

- (27) ?Ko je koju knjigu kupio?
 who is which book bought

It is plausible that the D-linked *wh*-phrase in (27) undergoes scrambling rather than focus movement. If the latter view were correct, we would expect the movement to be obligatory, which is not the case with scrambling, scrambling being optional.¹⁴ This means that at least marginally, *wh*-phrases can be scrambled in SC (see Sinicyn 1982 for Russian). Notice that there is crosslinguistic variation in this respect. Thus, Japanese allows *wh*-scrambling, while German does not (see Müller and Sternefeld 1996). The scrambling analysis thus may make it possible to account for the variation regarding (27).

An interesting confirmation of this analysis is provided by Bulgarian, where most speakers allow optional fronting of the D-linked *wh*-phrases under consideration (cf. (26b)).

- (28) Koj koja kniga e kupil?
 who which book is bought
 ‘Who bought which book?’

¹² Note also Reinhart’s (1997:158) statement that “D-linked constituents are not particularly good foci.” Pollock, Munaro, and Poletto (1998) give data from Bellunese that seem to indicate that in this language D-linked and non-D-linked *wh*-phrases appear in different positions. This can be accounted for if non-D-linked *wh*-phrases are focalized in this language and if D-linked *wh*-phrases cannot occur in a focus position.

¹³ *Je* is a second-position clitic. SC second-position cliticization is a murky phenomenon that may involve PF word reordering (see Bošković 2001, Franks and King 2000); hence, I ignore it here.

¹⁴ What is important here is that the movement in question is not focus movement, which is clear given the contrast in (30)–(31). I use the word *scrambling* merely to distinguish the movement in question from focus and *wh*-movement and to indicate the appearance of optionality. Whether we are dealing with true optionality (i.e., whether truly optional scrambling exists) remains to be seen.

Rudin (1988) argues that in Bulgarian constructions like (29), all *wh*-phrases are located in Spec,CP, which in present terms means that the focus licenser for Bulgarian *wh*-phrases is interrogative C. One argument for Rudin's claim concerns the fact that the *wh*-phrases cannot be split by a parenthetical.¹⁵

- (29) Koj kakvo e kupil?
 who what is bought
 'Who bought what?'
- (30) ?*Koj, spored tebe, kakvo e kupil?
 who according you what is bought
 'Who, according to you, bought what?'

Significantly, it is easier to split *wh*-phrases with a parenthetical if the second *wh*-phrase is D-linked.

- (31) ?Koj, spored tebe, koja kniga e kupil?
 who according you which book is bought
 'Who, according to you, bought which book?'

(30)–(31) provide evidence that *kakvo* in (29) and *koja kniga* in (28) are not located in the same position, which follows if, in contrast to *kakvo* in (29), *koja kniga* in (28) does not undergo focus movement, remaining below CP. I conclude, therefore, that D-linked *wh*-phrases do not undergo non-*wh*-fronting, which is explained under the focus movement analysis of non-*wh*-fronting.

Notice now that if, as is often assumed, English does covertly what Slavic languages do overtly with respect to *wh*-phrases, only non-D-linked *wh*-phrases would have to undergo LF movement in English, as argued in Pesetsky 1987 (see also Bošković and Franks 2000). However, they would undergo focus movement, not *wh*-movement.

The question arises whether a D-linked *wh*-phrase can stay in situ in a single question. This is not completely clear in SC. (32) is degraded on the true question reading, but not fully unacceptable.

- (32) ??On je kupio koju knjigu?
 he is bought which book
 'He bought which book?'

I suggest that the degraded status of (32) on the true question reading is a result of the failure to type the clause as a question in the sense of Cheng (1997), who argues that each clause must be typed (i.e., identified as declarative or interrogative) in overt syntax.¹⁶ A clause is typed as

¹⁵ For Rudin, this is an argument that the *wh*-phrases form a constituent. This is true under the adjunction-to-Spec,CP analysis, but not under the multiple-specifiers analysis. Under this analysis (30) can be ruled out owing to a feature clash: a [–*wh*, –focus] element is located in a [+*wh*, +focus] CP. Note that (30) improves markedly if the parenthetical is contrastively focused (see Bošković 1998c), which is not surprising under the focus movement analysis. In fact, this is an argument for the analysis.

¹⁶ Cheng leaves open how the typing is carried out with French *wh*-in-situ. I have nothing new to add concerning French. For relevant discussion, see Boeckx 1999 and Cheng and Rooryck 2000.

interrogative either through a question particle or by fronting a *wh*-phrase. Since SC does not have a question particle in the relevant constructions, one *wh*-phrase must front for typing purposes. I assume the typing is carried out by fronting and pronouncing a *wh*-phrase within the highest phonologically realized projection in overt syntax.¹⁷ In D-linking questions this can be done through either scrambling or *wh*-movement. (Given that SC patterns with French with respect to when overt *wh*-movement takes place, *wh*-movement should be an option even in short-distance matrix questions like (6a) since in French *wh*-movement takes place optionally in such questions. Recall that overt *wh*-movement cannot have taken place in the grammatical derivation of (6b) because of Superiority.) I assume that when *wh*-phrases in questions like (6) (or Russian (12)) are not D-linked, the typing can be carried out within the focus-licensing projection, which can be the highest projection given that, as argued in Bošković 1997c, 2000, CP does not have to be inserted until LF in (6). I argue that [+wh] C in questions like (6a) can be inserted either overtly or covertly. If it is inserted covertly, no overt *wh*-movement takes place. If it is inserted overtly, *wh*-movement takes place overtly. (I show that in structures where the *wh*-movement option is forced, LF C-insertion is blocked.)¹⁸ One argument for the analysis not noted in the works cited above concerns topic constituents (TC) (see Stjepanović 1999a,b for another argument based on sluicing). With TCs, SC shows Superiority effects even in short-distance null-C questions.

- (33) a. Tom čoveku, ko je šta poklonio?
 that man.DAT who is what bestowed
 ‘On that man, who bestowed what?’
 b. ??Tom čoveku, šta je ko poklonio?

Rudin (1993) discusses TCs in Bulgarian and argues that TCs are adjoined to CP.¹⁹ TCs can then be present in the structure only when CP is present overtly. Overt insertion of a [+wh] C induces a Superiority effect, which means that it forces *wh*-movement. It follows then that in (6b), which does not show Superiority effects and therefore does not involve overt *wh*-movement, CP is not inserted overtly.

¹⁷ I am departing from Cheng’s proposal in the technical aspect of the typing analysis, maintaining its spirit.

¹⁸ In Bošković 1998a, 2000, I apply the LF C-insertion analysis to French. LF C-insertion results in *wh*-in-situ—that is, lack of overt *wh*-movement—in French. As in SC, overt C-insertion triggers overt *wh*-movement. (This is where French differs from Chinese. In Chinese no *wh*-movement needs to take place overtly even when C is inserted overtly. More formally, the [+wh] feature of C is weak in Chinese and strong in French. French allows *wh*-in-situ because C can in certain contexts be inserted in LF, which is a possibility under Chomsky’s (1995:chap. 4) definition of strength.)

¹⁹ They precede *wh*-phrases located in Spec,CP. Note that (33) can contain a *wh*-phrase in the highest phrase so that clausal typing is not a problem. TCs are, however, often treated as extrasentential and ignored for clause-internal requirements. Thus, Ćavar and Wilder (1999) and Schütze (1994), who adjoin TCs to CP, treat TCs as extrasentential (i.e., as not belonging to the same clause as elements dominated by CP) for the purpose of clitic placement. It is then possible that the presence of a TC—which is not dominated by CP, hence can be said not to make the CP phonologically realized—does not force clausal typing within CP in (33). *Wh*-movement still must take place in (33) for reasons given above. Note that even if we assume that TCs are located in the Spec of a head taking CP as complement, as in Tomić 1996, *wh*-movement will still be forced in (33). Under this analysis it is also natural to ignore the projection hosting TCs for clausal typing purposes. Since according to Tomić the projection hosts only elements denoting old information, *wh*-phrases can never move to it; that is, they always remain below it. Under this analysis we can assume that clausal typing takes place up to CP—in other words, that CP closes its domain. I assume that for one of the above reasons, TCs do not affect clausal typing.

Notice that Russian does not exhibit Superiority effects even in TC constructions. This is expected given that Russian is a Chinese-type language with respect to when *wh*-movement must take place. *Wh*-movement never has to take place in Russian regardless of whether C is inserted overtly or covertly.

- (34) a. A etomu človeku kto kogo predstavil?
 and that man.DAT who whom introduced
 ‘And to that man, who introduced whom?’
 b. A etomu človeku kogo kto predstavil?

Notice also that, in contrast to (22), SC (33a) can have only a pair-list answer. This is expected. Recall that TCs require overt C-insertion, which in turn triggers overt *wh*-movement. In contrast to (22), (33a) then must involve overt movement to Spec,CP, hence the obligatoriness of a pair-list answer. On the other hand, Stepanov (1998) notes that Russian (34a) can still have a single-pair answer, as expected given that Russian questions do not have to involve overt movement to Spec,CP.

Returning to the typing requirement, notice that although (35a) is unacceptable on the true question reading, it is accepted on the echo reading. (The judgment holds for the request-for-repetition reading.)

- (35) a. Ona tvrdi da ŠTA/*šta mrzi?
 she claims that what hates
 ‘She claims that she hates WHAT?’/‘What does she claim that she hates?’
 b. ?*Ona tvrdi da mrzi ŠTA/šta?

This is expected. The current analysis attributes the unacceptability of (35a) on the true question reading to the failure to type the matrix clause as interrogative. Since echo questions are not subject to the typing requirement (note that English echo questions do not have to involve overt *wh*-movement), the problem does not arise on the echo reading. The *wh*-phrase still has to front for the reason discussed above (focus), which does not apply in English and which is independent of the typing requirement in the sense that *wh*-phrases are subject to it in MWF languages even when the typing is not an issue.

Notice that echo questions like (36) and (35b) are significantly better (in fact, acceptable) on the reading on which they express surprise than on the reading on which they ask for repetition of what the echo questioner has not heard. (The judgment is given for the latter reading. The surprise reading generally induces even stronger stress on the echo *wh*-phrase than the request-for-repetition reading. For discussion of different types of echo questions, see Pope 1976 and Wachowicz 1974.)

- (36) ?*Ona je poljubila KOGA?
 she is kissed who
 ‘She kissed WHO?’

The focus movement analysis can account for this straightforwardly, 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. It is then not surprising that the echo *wh*-phrase is subject to focus movement only on the latter reading. (Recall that focus represents new information.)

To sum up, in contrast to non-D-linked *wh*-phrases, D-linked *wh*-phrases and certain echo *wh*-phrases can remain in situ in MWF languages, which can be accounted for under the focus movement analysis, a fact that should be interpreted as evidence for the analysis. (Recall that the possibility of focused material splitting fronted non-D-linked *wh*-phrases in Bulgarian also provides evidence for the focus movement analysis.) We have seen that there are three distinct ways of fronting *wh*-phrases in MWF languages: *wh*-movement, pure focus movement, and scrambling. The second way is the only one that is always fully acceptable for all speakers of MWF languages.²⁰

2.2 Phonological Exceptions to the Obligatoriness of Wh-Fronting in MWF Languages

I turn now to phonological exceptions to the obligatoriness of fronting *wh*-phrases in MWF languages. One such exception is exemplified by SC (37), which contrasts with (13b) and (16a).²¹

- (37) Šta uslovljava šta?
 what conditions what

What is relevant here is the actual phonological form of the *wh*-phrases. The second *wh*-phrase does not front if it is homophonous with the first fronted *wh*-phrase.²² Apparently, SC does not allow sequences of homophonous *wh*-words. To avoid formation of such a sequence, a *wh*-phrase can remain in situ. Notice that in (38) the second *wh*-phrase must front. Because of the adverb, fronting of the second *šta* does not create a sequence of homophonous *wh*-words.

- (38) a. Šta neprestano šta uslovljava?
 what constantly what conditions
 ‘What constantly conditions what?’
 b. ?*Šta neprestano uslovljava šta?

A *wh*-phrase thus can be left in situ only as a last resort when necessary to avoid forming a sequence of homophonous *wh*-words. The same holds for Bulgarian, Russian, and Romanian.

- (39) a. Kakvo obuslavlja kakvo? (Bulgarian)
 what conditions what
 b. *Kakvo kakvo obuslavlja?
 c. Čto obuslovalo čto? (Russian)
 what conditioned what
 d. *Čto čto obuslovalo?

²⁰ The focus requirement can in fact be considered the defining characteristic of MWF languages.

²¹ The exception was pointed out to me by Wayles Browne (personal communication).

²² It can be marginally fronted if very heavily stressed. With neutral stress, *Šta šta uslovljava? is ill formed.

- e. Ce precede ce? (Romanian)
 what precedes what
- f. *Ce ce precede?

We seem to be dealing here with a low-level PF effect, since the information concerning the pronunciation of *wh*-phrases should not be accessible to the syntax. It appears that we need a PF constraint against consecutive homophonous *wh*-phrases in the languages in question. Billings and Rudin (1996) in fact propose such a constraint for Bulgarian to account for (40a).²³

- (40) a. *Koj na kogo kogo e pokazal?
 who to whom whom is shown
 ‘Who showed whom to whom?’
- b. cf. Koj kogo na kogo e pokazal?

Notice that we cannot be dealing here with a Superiority effect. It is shown in Bošković 1997b that only the highest *wh*-phrase is sensitive to Superiority in Bulgarian; that is, the highest *wh*-phrase moves first, the order of movement of other *wh*-phrases being in principle free. This is shown by (41)–(44). (Recall that the order of *wh*-phrases corresponds to the order of movement to Spec,CP.)²⁴

²³ One of my Bulgarian informants does not have the constraint. All others in all four languages do. Similar constraints are found in other languages, for example, Italian (Napoli’s (1976) constraint on clitics), Turkish (Kornfilt’s (1986) constraint on consecutive sequences of compound and possessive markers), Japanese (some instances of Case marker drop), and Ancient Greek (the ban on homophonous sequences of articles; see Golston 1995). SC has this kind of effect in other constructions as well. As shown in (i), the accusative feminine clitic *je* is replaced by *ju* when adjacent to the auxiliary *je* ‘is’.

- (i) a. Oni su je/*ju zaboravili.
 they are her forgotten
 ‘They forgot her.’
- b. On ju/*je je zaboravio.
 he her is forgotten
 ‘He forgot her.’

Additionally, Howard Lasnik (personal communication) notes that the possessive of *boys* must be *boys’* and not *boys’s*, though the relevant phonetic sequence is possible, as in the family name *the Boys’s*. This shows that we are dealing with a morphological rather than a phonetic effect. (Note that the antihomophony effect is not universal. In fact, there are exceptions to it even in the languages cited above.)

²⁴ As argued in Bošković 1997b, the object *wh*-phrase checks the strong [+wh] feature of C in (41) rather than the adjunct because it moves to its Case-checking position prior to *wh*-movement, thus ending up higher than the adjunct prior to *wh*-movement. Notice also that (i) shows that (41)–(44) do not exhibit the same phenomenon as English (ii), where addition of a lower *wh*-phrase rescues a Superiority violation (see Pesetsky 2000 for a recent discussion of this effect).

- (i) a. *Kogo koj kak e tselunal?
 b. *Kogo koj kakvo e pital?
- (ii) a. *What did who buy?
 b. (?)What did who buy where?

- (41) a. Kogo kak e tselunal Ivan?
 whom how is kissed Ivan
 ‘How did Ivan kiss whom?’
 b. ?*Kak kogo e tselunal Ivan?
- (42) a. Koj kogo kak e tselunal?
 who whom how is kissed
 ‘Who kissed whom how?’
 b. Koj kak kogo e tselunal?
- (43) a. Kogo kakvo e pital Ivan?
 whom what is asked Ivan
 ‘Whom did Ivan ask what?’
 b. ?*Kakvo kogo e pital Ivan?
- (44) a. Koj kogo kakvo e pital?
 who whom what is asked
 ‘Who asked whom what?’
 b. Koj kakvo kogo e pital?

Note now the parallelism between the *wh*-phrases in SC (6) and the noninitial fronted *wh*-phrases in Bulgarian with respect to the lack of Superiority effects. The parallelism is expected under the current analysis, where the movement of the first *wh*-phrase in Bulgarian differs from the movement of the second and third *wh*-phrases, which is in turn the same as the movement of all the *wh*-phrases in SC (6). In other words, since the second and third movements in Bulgarian (41)–(44) and both movements in SC (6) are the same (both can be pure focus movement), it is not surprising that they behave the same way with respect to Superiority, differing in this respect from the first movement in (41)–(44). The data show that only the *wh*-phrase checking the strong [+wh] feature of C (which means only one *wh*-phrase) is subject to Superiority, *wh*-phrases undergoing pure focus movement being insensitive to it. In Bošković 1999 I give an economy-based explanation of this fact applicable to both SC and Bulgarian that relies on certain differences in formal properties of focus and *wh*-movement.²⁵

Interestingly, like Bulgarian, SC exhibits selective Superiority effects where it requires *wh*-movement, as in, for example, embedded *wh*-clauses. As in Bulgarian questions, in such contexts the highest *wh*-phrase prior to movement is first in the linear order, the order of other *wh*-phrases being free.²⁶

²⁵ The explanation is too involved to repeat here. Richards (1997) gives a nonunified analysis of Superiority in Bulgarian and SC that accounts for the Bulgarian paradigm. However, I show in Bošković 1998c that the analysis of SC does not work. (It does not account for the full paradigm and is based on certain incorrect assumptions about the syntax of SC.) Also, it cannot be extended to Russian, being unable to account for the weak crossover effects with clause-internal *wh*-fronting in that language.

²⁶ Whether SC has the same structure as Bulgarian when it requires *wh*-movement is not completely clear. In Bošković 1997a I analyze SC constructions of this type differently from Bulgarian MWF constructions. However, this may be wrong. The main argument against treating any SC question on a par with Bulgarian questions concerns *wh*-islands.

- (45) a. ?*Ima kome kako da pomogne.*
 has whom how PART helps
 ‘S(he) has someone to help somehow.’
 b. **Ima kako kome da pomogne.*
 c. ?*Ima ko kako kome da pomogne.*
 has who how whom PART helps
 ‘There is someone who can somehow help somebody.’

These facts confirm the current analysis of when SC and Bulgarian require overt *wh*-movement.

Returning to (40), given the above discussion, (40) cannot be accounted for by Superiority. Notice also that (40a) improves when the third *wh*-phrase remains in situ, which is not unexpected if the unacceptability of (40a) is indeed due to a PF constraint against homophonous sequences of *wh*-phrases. The third *wh*-phrase cannot remain in situ in (40b), which confirms that leaving a *wh*-phrase in situ is a last resort device for saving a question from violating the PF constraint in question.

- (46) a. *Koj na kogo e pokazal kogo?*
 who to whom is shown whom
 ‘Who showed whom to whom?’
 b. ??*Koj kogo e pokazal na kogo?*

We are dealing here with a rather intricate interplay of phonology (the PF constraint in question) and syntax (the obligatoriness of fronting *wh*-phrases). A principled way of capturing it is provided by a recent approach to the pronunciation of nontrivial chains, based on the copy theory of movement. It is generally assumed that on the LF side there is some choice in deciding where

However, I show in Bošković 1998c, 2002, that the *wh*-island test is irrelevant. It is worth noting here that *wh*-phrases are more difficult to split with a parenthetical in SC constructions that must involve overt *wh*-movement, which is a characteristic of Bulgarian questions (see (30)). (I ignore the *li*-construction and the correlative construction, since the relevant parenthetical placement is ruled out in these constructions for independent reasons. Notice also that, like Bulgarian MWF constructions, SC (i.e.g) improve if the parenthetical is contrastively focused.)

- (i) a. *Ko, po tebi, koga tuče?*
 who according you whom beats
 ‘Who, according to you, is beating whom?’
 b. ?*Ko koga, po tebi, tuče?*
 c. **Ko, po tebi, koga vjeruju da tuče?*
 who according you whom believe that beat
 ‘Who, according to you, do they believe is beating whom?’
 d. ?*Ko koga, po tebi, vjeruju da tuče?*
 e. ??*Tom čovjeku, ko, po tebi, šta poklanja?*
 that man.DAT who according you what bestows
 ‘On that man, who, according to you, bestows what?’
 f. *Tom čovjeku, ko šta, po tebi, poklanja?*
 g. **Ima ko, po tebi, šta da mu proda.*
 has who according you what PART him sells
 ‘There is someone who, according to you, can sell him something.’
 h. ?*Ima ko šta, po tebi, da mu proda.*

(ic–h) indicate that the SC constructions in question should be treated on a par with Bulgarian MWF.

deletion should take place in nontrivial chains. Thus, Chomsky (1995) argues that on the reading on which *himself* in (47) refers to *Joe*, the tail of the chain created by *wh*-movement of *which picture of himself* is deleted so that *himself* remains in Spec,CP, where it is c-commanded by *Joe* but not *Jim*. On the other hand, on the reading on which *himself* refers to *Jim*, *himself* is deleted in the head of the chain and remains in the structure in the tail of the chain, where it is c-commanded by and local to *Jim*.²⁷

(47) Joe wonders [_{CP}[which picture of himself] [_{IP} Jim bought [which picture of himself]]]

By contrast, it is often assumed that no choice about where deletion should take place in nontrivial chains is available in PF, the head always being the sole survivor, as in (48).

- (48) a. The student was arrested ~~the student~~.
 b. *~~The student~~ was arrested the student.
 c. *The student was arrested the student.
 d. *The ~~student~~ was arrested ~~the~~ student.

However, a number of authors have argued that in PF there is also a choice concerning which member of a nontrivial chain survives deletion (see Bobaljik 1995, Brody 1995, Groat and O'Neil 1996, Runner 1998, Hiramatsu 1997, Pesetsky 1997, 1998, Richards 1997, Roberts 1997, Franks 1998, Nunes 1999, Bošković 2001). Of particular interest here is the proposal made by Franks (1998), who argues that just as in LF there is a preference for deletion in the head position of nontrivial chains (at least with operator-variable chains), so also in PF deletion in the tail of nontrivial chains (i.e., deletion of lower copies) is just a preference. More precisely, a lower member of a chain is pronounced instead of the head of the chain iff pronunciation in the head position would lead to a PF violation, provided that the violation can be avoided by pronouncing the lower member of the chain.²⁸ (By *head of a chain* I mean the highest member of a sequence of copies created by movement of the same element. I disregard the fact that in some cases two different chains, an A-chain and an \bar{A} -chain, are created by movement of the same element, as in *Who_i t_i seems t_i to t_i know it?*)

Let us see what the proposal entails for (37). The ungrammaticality of (13b) and (16a) shows that there is a syntactic requirement—namely, focus—that forces all *wh*-phrases in SC to move in overt syntax. This should also hold for the second *šta* in (37), which then also must undergo focus movement. As a result, (37) has the following S-Structure representation. (I am ignoring the lower copy of the first *šta*.)

(49) [_{FP} šta šta_i [_{uslovljava} šta_i]]
 what what conditions what

²⁷ Chomsky's analysis is slightly more complicated. He also argues that there is a preference for deletion in the head of operator-variable chains, motivated by **John wondered which picture of Tom_i he_i liked*.

²⁸ Pesetsky's (1997, 1998) system, which antecedes Franks's, is very similar to it (see also Bobaljik 1995, Hiramatsu 1997, Bošković 2001). However, Pesetsky does not explicitly claim that *only PF considerations* can license lower pronunciation, a position I wish to maintain.

I assume that there is a PF constraint against consecutive homophonous *wh*-words in SC. Given this constraint and the proposal that a lower member of a nontrivial chain can be pronounced if necessary to avoid a PF violation, the lower copy of the second *šta* will be pronounced in PF.²⁹

(50) [_{FP} *šta* *šta*_i [_{uslovljava} *šta*_i]]

We thus derive (37) and account for the contrast between (37) and (13b)/(16a) without violating the syntactic requirement that forces all *wh*-phrases to move overtly in SC (the second *šta* in (37) undergoes focus movement), without look-ahead from the syntax to the phonology, and without any PF movement. The analysis also provides evidence for the copy theory of movement.

Now consider Bulgarian (46). (46a–b) have the S-Structure representation in (51). (The order of the objects in the base position and the precise position of the subject prior to *wh*-movement are irrelevant. Recall that the order of *wh*-phrases reflects the order of movement to Spec,CP. *Koj* moves first; the order of movement of the objects is free. *Pokazal* undergoes short V-movement, and *e* may be moving to C.)

(51) a. *koj_i na kogo_j kogo_k e koj_i pokazal na kogo_j kogo_k*
 b. *koj_i kogo_j na kogo_k e koj_i pokazal na kogo_k kogo_j*

Consider which copies of the *wh*-chains will be pronounced in (51a). Since we are dealing with a PF operation, it seems natural to scan the structure linearly, left to right. We then first examine the *koj* chain. Since nothing goes wrong if the chain is pronounced in the head position, we pronounce the initial *koj*. Next, consider the *na kogo* chain. Again, no PF violation occurs if we pronounce its head. (Nothing rules out the *koj na kogo* sequence. Note that I assume that the decision whether to pronounce the head or the tail of the chain is made without look-ahead. It cannot be affected by later decisions concerning pronunciation of other chains.) At this point, then, we have the sequence *koj na kogo* sentence-initially. Finally we consider the *kogo* chain. Pronouncing *kogo* in the head position would violate the PF constraint against homophonous sequences of *wh*-words. To avoid that, we pronounce the tail of the chain, deriving (46a). Now consider (51b). It is easy to verify that if we scan the structure left to right when determining which copies to pronounce, no PF violation occurs if we pronounce the heads of all three chains. We then must pronounce the initial *wh*-phrases, deriving (40b). Note that (46b) is underivable. The data in (40) and (46) are thus accounted for.

Romanian, a Bulgarian-type MWF language (see Rudin 1988), provides another phonological exception to the obligatoriness of fronting *wh*-phrases. (52) is an example of MWF in Romanian.

(52) *Cine unde ce a adus?*
 who where what has brought
 ‘Who brought what where?’

²⁹ Although SC is a free word order language, when the subject and the object cannot be disambiguated through case inflection there is a strong tendency to interpret the first NP as the subject and the second NP as the object. The same tendency exists in (49).

Like SC, Bulgarian, and Russian, Romanian obligatorily fronts all *wh*-phrases, including *wh*-phrases in echo questions. Thus, according to Comorovski (1996), (53) is disallowed even as an echo question.³⁰

- (53) *Ion a adus ce?
 Ion has brought what

Interestingly, Comorovski notes that exceptionally, echo *wh*-phrases have to stay in situ in questions that require a question as an answer. ((54b) would be unacceptable as a true, nonecho question.)

- (54) a. Q: Cine a uitat să deschidă parașuta?
 who has forgotten to open the-parachute
 b. Echo Q: Cine a uitat să deschidă ce (anume)?
 who has forgotten to open what exactly

Comorovski shows that we are dealing with a PF effect. She shows that it is impossible to assign a proper melodic contour to (54b) if the echo *wh*-phrase is fronted. True questions in Romanian have a melodic peak on the *wh*-phrase, which is immediately followed by a falling contour. The intonation could not start falling immediately after the true question *wh*-phrase if it were immediately followed by an echo *wh*-phrase, echo *wh*-phrases being pronounced with a sharp rise in pitch. Comorovski (p. 63) shows that a proper melodic contour can be assigned if the echo *wh*-phrase is pronounced in situ.

How can we instantiate this formally? (53) shows that, as in SC, in Romanian echo *wh*-phrases must front in the syntax. The same then holds for the echo *wh*-phrase in (54). Ignoring the copy left by fronting the first *wh*-phrase, (54b) has the S-Structure form in (55a). As discussed above, if the head of the chain created by the fronting of the echo *wh*-phrase is pronounced, the construction cannot be assigned a proper melodic contour, resulting in a PF violation. However, the violation can be avoided if the tail of the chain is pronounced, as in (55b). The construction can then be assigned a proper intonation pattern.

- (55) a. true-*wh* echo-*wh*_i . . . verb echo-*wh*_i
 b. true-*wh* ~~echo-*wh*_i~~ . . . verb echo-*wh*_i

We also explain why the second *wh*-phrase has to be fronted on the nonecho reading. Since on this reading the second *wh*-phrase is not pronounced with a sharply raised pitch, the PF problem that arises on the echo question reading of the second *wh*-phrase does not arise on the nonecho reading. PF then does not license lower pronunciation of the second *wh*-phrase on the nonecho reading, as it does on the echo reading. Lower pronunciation is then disallowed.

Chomsky's (1995) Move F hypothesis provides an alternative analysis. SC (37) and Romanian (54b) can be analyzed as involving overt feature movement of the second *wh*-phrase (it would

³⁰ Some of my informants do not share Comorovski's judgment. I am focusing here on the dialect in which (53) is unacceptable as an echo question.

take place in the same cycle as the movement of the first *wh*-phrase), leaving phonological features of the second *wh*-phrase behind. The second *wh*-phrase then has to be pronounced in the tail of the chain.³¹

(56) [_{FP} šta FF(šta)_i [uslovljava šta_i]]

The analysis is inconsistent with Chomsky's (1995) system, where separating formal features from phonological features is assumed to lead to a PF crash. Pesetsky (2000), however, argues against this position. According to Pesetsky, there is nothing inherent to PF that would prevent feature movement prior to Spell-Out.³² To make the Move F analysis work in the constructions in question, we have to assume that full phrasal movement is preferable to feature movement, at least prior to Spell-Out. This can be assumed to hold generally or only in the constructions in question. Taking the latter tack would essentially mean assuming that each movement is arbitrarily specified as either affecting or not affecting phonological features, as in Bobaljik 1995, Groat and O'Neil 1996, and Pesetsky 1997, 1998. We further need to assume that this holds only up to convergence. The specification can be overridden if necessary for PF convergence, as in the cases under consideration. Alternatively, we can assume that phrasal movement is generally preferred to feature movement at least in overt syntax. We would then be following Chomsky's (1995) system. However, we cannot use Chomsky's exact reasoning since it does not allow for the up-to-PF-convergence exception to the obligatoriness of full phrasal movement: it always forces full phrasal movement prior to Spell-Out. We need a system in which phrasal movement is only a preference. A proposal by Norvin Richards, discussed in Pesetsky 2000, achieves this. Following Richards, Pesetsky observes that taking the idea of Attract Closest seriously would make phrasal movement more economical than feature movement because the phrase is always the element with the relevant feature that is closest to the target (see also Fukui 1997). Suppose we are allowed to look inside the closest candidate for attraction if necessary for PF convergence. (I am departing here from Chomsky's (1995) view of Attract Closest.) This is exactly what would happen in the cases under consideration, where full phrasal focus movement of the second *wh*-phrase results in a PF crash. Feature movement then takes place instead of full phrasal movement.

Consider (40) and (46) under this analysis. Recall that the order of *wh*-phrases reflects the order of movement to Spec,CP. The highest *wh*-phrase *koj* moves first, the order of movement of *kogo* and *na kogo* being free. In all constructions *koj* moves first via phrasal movement. Either *na kogo* or *kogo* moves second. In (57a) *na kogo* moves second and in (57b) *kogo* does. Since at this point nothing goes wrong as a result of these movements, the movements can be, hence must be, phrasal. The first two *wh*-phrases are then pronounced in the raised positions.³³ (I use traces here for ease of exposition.)

³¹ The Move F analysis seems restatable in terms of Chomsky's (2001) Agree.

³² Note that phonological features remain together after the movement. And if PF needs formal features, their copy is present in the same position with phonological features even after Move F.

³³ I assume later movements cannot affect the locally made decision to apply phrasal movement here.

- (57) a. Koji_i na kogo_j e t_i pokazal t_j kogo?
 who to whom is shown whom
 b. Koji kogo_j e t_i pokazal na kogo t_j?

Finally, the third *wh*-phrase moves. In (57b) nothing goes wrong if it undergoes phrasal movement, which is then the only option. Since the movement carries phonological features, this *wh*-phrase is also pronounced in the raised position, giving (40b). However, if the third *wh*-phrase undergoes phrasal movement in (57a), the constraint against consecutive homophonous *wh*-phrases is violated. To avoid this, the third *wh*-phrase undergoes feature movement. This *wh*-phrase is then pronounced in its base-generated position, giving (46a). Neither derivation can yield (46b), a desirable result.

Let us see if we can tease apart the Move F analysis and the pronounce-a-copy analysis (PCA). Note first that the PCA may be conceptually more appealing. The Move F analysis involves some globality (Move F sometimes takes place instead of phrasal movement in the syntax for PF reasons), which is not the case with the PCA.³⁴ Let us, however, see if the analyses can be teased apart empirically.

Under the most natural interpretation of the PCA we would expect successive-cyclic movement to have a PF reflex in the constructions under consideration. Unless we specifically stipulate that only the head or the very tail of a chain can be pronounced (see Franks 1998 for a different proposal), it seems that the second *šta* in the SC *šta šta* ‘what what’ construction and the echo *wh*-phrase in the Romanian construction would not have to be pronounced in their base positions. This is not the case necessarily under the Move F analysis. In fact, unless additional assumptions are adopted (for relevant discussion see Cheng 2000, where it is proposed that Move F can be launched in the middle of successive-cyclic phrasal movement), under this analysis we would expect the relevant *wh*-phrases to occur in the position they occupy prior to *wh*-movement. The test in question cannot be carried out for the SC ‘what what’ construction because of an interfering factor. As shown in Bošković 1997a, SC has more than one position for focus licensing of *wh*-phrases, as a result of which it is difficult to determine in more complicated constructions whether we are dealing with pronunciation of a copy of the second ‘what’, or with the head of the focus movement chain of the second ‘what’. The same problem arises with Romanian echo *wh*-constructions since Romanian seems to have more than one position where moving echo *wh*-phrases can be licensed. The problem, however, does not arise in Bulgarian and Romanian ‘what what’ constructions since, as Rudin (1988) shows (see also (29)–(30)), in these languages only interrogative C can license non-*wh*-fronting of nonecho *wh*-phrases.³⁵ Unfortunately, the data are not clear.

³⁴ Similar globality is quite generally present in Chomsky’s (1995) view of Move F, where phrasal movement always takes place in overt syntax for PF reasons, as well as in Chomsky’s (1995:chap. 3) view of strength as an illegitimate PF object.

³⁵ This does not hold for echo *wh*-phrases. This does not provide evidence that non-*wh*-fronting of nonecho *wh*-phrases and non-*wh*-fronting of echo *wh*-phrases in these languages are different phenomena. It is possible that although there is more than one potential licenser for non-*wh*-fronting in these languages, interrogative C must be the licenser whenever it is present (see Bošković 2002 for explanation of why this is the case). In Bošković 2001 I suggest that, unlike in SC, in Bulgarian interrogative C is always inserted overtly. The reason for this is that, unlike in SC, in Bulgarian

(Only one copy of the second ‘what’ is pronounced. Note that (58a) and (59a) differ from (58b) and (59b), where the indicated pronunciation is the only possibility. % indicates variation in judgments.)³⁶

- (58) a. Kakvo (*kakvo) misli (*kakvo) Ivan (%kakvo) će (kakvo) obuslavlja (kakvo)?
 what what thinks Ivan that conditions
 ‘What does Ivan think conditions what?’
 b. Koj kakvo misli Ivan će obuslavlja?
 who what thinks Ivan that conditions
 ‘Who does Ivan think conditions what?’
- (59) a. Ce (*ce) crede (*ce) Ion (*ce) că (%ce) a (*ce) determinat (ce)?
 what what thinks Ion that has determined
 ‘What does Ion think determined what?’
 b. Cine ce crede Ion că a determinat?
 who what thinks Ion that has determined
 ‘Who does Ion think determined what?’

The most plausible candidate for an intermediate landing site seems to be the embedded Spec,CP. The preverbal copy in (58a) can be located in the Case-checking position of ‘what’, given that, as shown in Bošković 1997b, accusative *wh*-phrases pass through their Case-checking position on their way to Spec,CP. So, the only unambiguous intermediate copy of *wh*-fronting itself is the one immediately preceding *če/că*. The judgments of my informants differ concerning the possibility of pronouncing the second ‘what’ in this position, most of them rejecting it. However, several interfering factors prevent us from drawing a strong conclusion from this. First, something like a Doubly Filled Comp Filter can be an interfering factor here. Notice also that at least in some cases Bulgarian and Romanian are not sensitive to the *Wh*-Island Constraint, which can be interpreted as indicating that Bulgarian and Romanian *wh*-phrases do not have to stop in Spec,CP, another

interrogative C is lexically specified as a PF verbal affix. This requirement cannot be satisfied if the C is not inserted overtly. Evidence for the difference between Bulgarian and SC is provided by the fact that in Bulgarian but not in SC, the C must be V-adjacent. (Romanian patterns with Bulgarian.)

- (i) a. *Kakvo toj dade na Petko? (Bulgarian)
 what he gave to Petko
 ‘What did he give to Petko?’
 b. Kakvo dade toj na Petko?
 c. Šta on dade Ivanu? (SC)
 what he gave Ivan.DAT

Since in true questions interrogative C must be inserted overtly, nonecho *wh*-phrases must move to interrogative CP in Romanian and Bulgarian. In pure echo questions it appears that interrogative C does not have to be inserted at all. Hence, echo *wh*-phrases can be licensed in other positions.

³⁶ Among my informants who have the ‘what what’ constraint, both Bulgarian informants can realize the second ‘what’ before the verb and one can realize it before *če*. Only one of my Romanian informants allows the indicated intermediate pronunciation. However, there is an interfering factor with realizing *ce* before the main verb in (59a). Only certain clitic-like adverbs can intervene between the auxiliary and the participle, which suggests that the auxiliary is a verbal clitic (see Dobrovie-Sorin 1994:10–11).

interfering factor.³⁷ Furthermore, Richards (1997) claims that movement of the second *wh*-phrase is not sensitive to Subjacency. According to him, the first *wh*-phrase satisfies Subjacency with respect to the matrix *C* in the constructions in question. Given his Principle of Minimal Compliance, the gist of which is that every requirement needs to be satisfied only once, the second *wh*-phrase does not have to satisfy Subjacency. Its movement can then proceed in one fell swoop. In fact, if we assume that successive-cyclic movement takes place to satisfy Subjacency, the second *wh*-phrase in the above constructions cannot undergo successive-cyclic movement; it has to move in one fell swoop (the same holds for Chomsky's (2001:34) approach to locality).

I turn now to an argument for the current analysis that can also help us tease apart the PCA and the Move F analysis. Under the current analysis, the *wh*-phrase in situ in the constructions in question undergoes movement in overt syntax, either full phrasal movement, as in the PCA, or feature movement, as in the Move F analysis. As a result, we would expect the *wh*-phrase to be able to license other elements from the putative raised position. One relevant phenomenon is parasitic gap (PG) licensing. Since Bulgarian and SC do not allow PGs, I focus on Romanian.³⁸ Consider (60a–b)–(61).³⁹

- (60) a. Cine a citit CE fără să claseze?
 who has read what without SUBJ.PART files
 'Who read what without filing?'
 b. Ce precede ce fără să influențeze?
 what precedes what without SUBJ.PART influences
 'What precedes what without influencing?'

³⁷ For some authors (see Rudin 1988, Koizumi 1999, Richards 1997), Bulgarian *wh*-phrases move through Spec,CP even in *wh*-island configurations, which would eliminate the interfering factor. The analysis relates the resistance of Bulgarian to the *Wh*-Island Constraint to the possibility of MWF. However, see Bošković 1998c, 2002, for criticism of this analysis. (For one thing, I show that in all relevant respects Bulgarian behaves like Swedish, a non-MWF language.)

³⁸ Russian allows them, but interfering factors prevent us from carrying out the PG test. (According to Arthur Stepanov (personal communication), PGs are not natural in Russian MWF constructions.) Bulgarian and SC have the counterparts of (60b), but I believe that in these languages such constructions should be analyzed as involving across-the-board movement (ATB). (Other PG constructions from English are unacceptable in these languages. For what it is worth, (i) gives the relevant examples from Bulgarian.)

- (i) a. (?)Kakvo opredelja kakvo bez da očkva?
 what determines what without PART anticipates
 'What determines what without anticipating?'
 b. *Koj opredelja kakvo bez da očkva?
 who

³⁹ (60a–b) involve the PF exceptions to the obligatoriness of MWF. (Capitals indicate an echo *wh*-phrase.) All my informants accept (60a). The judgments are divided for (60b), with the majority accepting it. Note that there are potentially interfering factors in the PG test. PF information may also be involved in PG licensing (see Franks 1993). This may help to account for the judgment of speakers who do not accept (60b), given that under both the PCA and the Move F analysis the PG licenser is not phonologically realized in the raised position. (Note that there are analyses (see, e.g., Nunes 2001) on which we would not necessarily expect PGs to be licensed in the constructions in question under the current analysis. A Nunes-style analysis might be appropriate for the speakers who do not accept (60b) as well as the ATB construction from footnote 38. Nunes extends his analysis of PGs to ATB.)

- (61) *Cine a citit cartea fără să claseze?
 who has read the-book without SUBJ.PART files
 ‘Who read the book without filing?’

The fact that a *wh*-in-situ can license a PG provides strong evidence for the current approach, on which the *wh*-in-situ undergoes movement in overt syntax despite being pronounced in situ. Notice that (60a–b) contrast in the relevant respect with their English counterparts.

- (62) a. *Who read WHAT without filing?
 b. *What precedes what without influencing?

This is not surprising under the current analysis, since (60) and (62) receive different analyses despite the superficial similarity. This is particularly clear under the PCA, where the *wh*-in-situ in (60) undergoes phrasal movement in overt syntax that does not differ syntactically in any relevant respect from *wh*-movement of *what* in (63). It is then not surprising that (60) patterns with (63) and not (62).

- (63) What did John file without reading?

Under the Move F analysis of (60), we have to assume that formal features suffice for PG licensing. (Only the formal features of the *wh*-in-situ move; semantic and phonological features stay behind.) Furthermore, to account for the contrast between (60) and (62), we need to assume that the in-situ *wh*-phrase in English (62) does not move in LF.⁴⁰ If it were to move in LF, in Chomsky’s (1995) system it would undergo feature movement (see, however, Pesetsky 2000), like the in-situ *wh*-phrase in (60) under the Move F analysis of these constructions. True, feature movements in (60) and (62) could be taking place in different components, overt syntax and LF. (This would not be the case in systems that dispense with LF.) However, this should be irrelevant as long as we do not assume that PG licensing is an S-Structure phenomenon, which would be inconsistent with the Minimalist Program. If either of the two assumptions necessary to make the Move F analysis of (60) work cannot be maintained, we have here an argument for the superiority of the PCA over the Move F analysis.

The PG data show that we are dealing here with a new type of in-situ *wh*-phrase not attested in English-type, French-type, and ‘‘true’’ *wh*-in-situ languages. We have already seen that, in contrast to in-situ *wh*-phrases in MWF languages, in-situ *wh*-phrases in English multiple questions cannot license PGs. The same holds for in-situ *wh*-phrases in French and Malay *wh*-in-situ questions.⁴¹

⁴⁰ This is so even if the in-situ *wh*-phrase is not D-linked, contra Pesetsky 1987. Note that the PCA is consistent with Pesetsky’s claim that non-D-linked in-situ *wh*-phrases move in LF in English.

⁴¹ The term *in-situ wh*-phrase refers to any *wh*-phrase that is not pronounced in an operator position. The terms *wh*-in-situ questions and *wh*-in-situ languages are used in the same sense. Notice that I avoid using as illustration *wh*-in-situ languages that allow null objects, such as Chinese and Japanese. It is difficult to tease apart PGs and null objects in these languages.

- (64) a. *Il a lu quoi sans classer? (French)
 he has read what without to-file
 ‘What has he read without filing?’
 b. cf. Qu’a-t-il lu sans classer?
 c. *Kamu aturkan buku yang mana tanpa baca? (Malay)
 you filed book that which without reading
 ‘Which book did you file without reading?’
 d. cf. Buku yang mana kamu aturkan tanpa baca?

This means that whatever analysis of (60) is adopted, it should not be applied to (64). Therefore, if the in-situ *wh*-phrases in (60) undergo feature movement, the in-situ *wh*-phrases in (64) cannot be undergoing feature movement.⁴² And if the in-situ *wh*-phrases in (60) undergo phrasal movement with pronunciation of a lower copy, the same should not hold for the in-situ *wh*-phrases in (64).⁴³ Either way, we are dealing here with a distinct type of in-situ *wh*-phrase, different from in-situ *wh*-phrases in non-MWF languages like English, Malay, and French. As a result, determining the most adequate analysis of (60) has important ramifications for analyzing in-situ *wh*-phrases in non-MWF languages.

2.3 A Syntactic Exception to the Obligatoriness of Wh-Fronting in MWF Languages

Comorovski (1996) notes that echo *wh*-phrases in Romanian can exceptionally stay in situ within non-Relativized Minimality islands (i.e., non-*wh*-islands). (65a) contrasts with (53) on the echo question reading. Notice that overt *wh*-movement out of the island is not allowed regardless of the reading.⁴⁴

⁴² The Move F analysis of (60) is thus inconsistent with my (1998a, 2000) analysis of French *wh*-in-situ constructions, which I argue involve feature movement on the basis of their locality restrictions. (Incidentally, at least some of these locality restrictions do not hold in the Romanian constructions in question. Compare, for example, (59a) with my observation that French disallows long-distance in-situ questions.) Thus, to the extent that it is successful, my (1998a, 2000) analysis favors the PCA treatment of (60) over the Move F treatment. Needless to say, if the latter turns out to be correct, it would invalidate the Move F analysis of French *wh*-in-situ. Notice also that in Bošković 2000 (see also Cheng and Rooryck 2000), I provide evidence that French *wh*-in-situ and *wh*-in-situ in traditional *wh*-in-situ languages like Chinese and Japanese should not be analyzed in the same way.

⁴³ The PCA is thus inconsistent with analyzing *wh*-in-situ in French and Malay as involving phrasal movement of the in-situ *wh*-phrase that takes place prior to Spell-Out, with subsequent pronunciation of a lower copy. (For analyses along these lines for *wh*-in-situ languages where the PG test cannot be carried out (see footnote 41), see Groat and O’Neil 1996:131 and Bobaljik 1995:360. Pesetsky (2000) suggests this analysis for Chinese, and a Move F analysis for Japanese.)

⁴⁴ I again focus on the dialect in which echo *wh*-phrases must move, where (i) contrasts with (65a).

- (i) *Ion crede că Petru a cumpărat CE?
 Ion believes that Petru has bought what

Recall also that, as discussed above, there is more than one possible landing site for echo *wh*-phrases. For example, the echo *wh*-phrase in (i) can either stay within the embedded clause or move to the matrix clause, as illustrated in (ii). (*Ion* in (iia) can be a topic located outside CP.)

- (ii) a. Ion CE crede că Petru a cumpărat?
 b. Ion crede că CE a cumpărat Petru?

I assume that the same options are in principle available for the echo *wh*-phrase in (65a). As will become clear during the discussion below, only the derivation on which the echo *wh*-phrase moves syntactically into the matrix clause can yield (65a), where the echo *wh*-phrase is pronounced in situ.

- (65) a. Ion a auzit zvonul că Petru a cumpărat CE?
 Ion has heard the-rumor that Petru has bought what
 b. *Ce a auzit Ion zvonul că Petru a cumpărat?

Assuming that islandhood is syntactic in nature, we are dealing here with a syntactic exception to the obligatoriness of MWF in Romanian. The exception is readily accounted for under the Move F analysis, on which Romanian *wh*-phrases undergo Move F if phrasal movement is not possible. Ochi (1998) and Agbayani (1998) argue that phrasal movement but not feature movement is subject to non-Relativized Minimality-type islands. According to them, feature movement is subject only to Relativized Minimality islands through Attract Closest. If they are right, full phrasal movement of the echo *wh*-phrase in (65a) is not possible. The *wh*-phrase can then undergo feature movement.⁴⁵ The Move F analysis enables us to account for (65a) while still having the *wh*-phrase undergo movement to C, which is desirable given the ungrammaticality of (53). Given that (65a) is unacceptable on the true question reading, the question arises why the Move F derivation is unavailable on this reading. I speculate that Cheng's (1997) clausal typing is the culprit. A whole *wh*-phrase, including its phonological features, must be present in Spec,CP in overt syntax in Romanian to type a clause as a question. This rules out the possibility of *wh*-in-situ on the true question reading in Romanian.

The verb-second (V2) effect raises a potential problem for the Move F analysis. Normally, in both subject and nonsubject questions verbal elements occur in the second position on both the echo and nonecho readings of the fronted *wh*-phrase. As a result, they precede the subject in nonsubject questions.

- (66) Ce a spus Mădălina?
 what has said Madalina
 'What did Madalina say?'

Under the Move F analysis (65a) is a nonsubject question with the verbal elements following the subject. This is not a problem if the V2 effect is phonological in nature, as suggested in Boeckx 1998, Bošković 2001, Chomsky 1995, and Rice and Svenonius 1998, among others, for various languages. Alternatively, we can assume that the subject in (65a) is located in a pre-Spec,CP topic position.

Turning to the PCA, under this analysis (65a) involves phrasal movement of the echo *wh*-phrase in overt syntax. The head of the chain created by the movement is deleted and the copy is pronounced. (Deletion of the head must be sanctioned by PF considerations, which are discussed below.)

- (67) $\bar{e}e \dots [_{NP} \dots ce]$

⁴⁵ With *wh*-islands, full phrasal movement is allowed. As expected, feature movement is degraded.

- (i) a. CE se întreabă Ion cine a cumpărat?
 what REFL wondered Ion who has bought
 'What did Ion wonder who bought?'
 b. ?(?)Ion se întreabă cine a cumpărat CE?

Under this analysis (65a) and (65b) have the same syntactic derivation. As a result, accounting for the contrast between them becomes difficult. The only way to preserve the PCA seems to be to assume that islandhood is at least to some extent a PF property. Some older approaches to islandhood do assume this—for example, the approach in Perlmutter 1972, revived in a slightly different form in Pesetsky 1997, 1998. (For PF approaches to islandhood, see also Lasnik 2000 and Merchant 1999.) For Perlmutter, syntactic movement is not constrained by islands. What is constrained by islands is the obligatory deletion of the copy left by movement. The deletion fails when an island intervenes between the head of a chain and its copy. Interpreting this as a PF violation leads to pronouncing a copy instead of the head of the chain under Franks's approach to pronunciation of chains. The PCA seems to be based on a rather unorthodox view of locality restrictions. This is actually not true. The analysis is based on the more or less standard view of the saving effect of resumptives with respect to locality of movement (but see Boeckx 2001), which implies that at least to some extent, locality is a PF phenomenon. It is well known (see, e.g., Shlonsky 1992, Pesetsky 1997, 1998) that in a number of languages (e.g., Hebrew, Arabic, Irish, and English) a locality violation can be saved by phonologically realizing a copy within the island as a resumptive pronoun. Using a resumptive in these languages is a last resort strategy employed only when movement would otherwise violate locality restrictions on movement.

- (68) a. *There is one worker who the company fired the employee that had treated badly.
 b. There is one worker who the company fired the employee that treated him badly.
 c. *This is the guy who I like him.
 (Pesetsky 1998:364)

Apparently, phonologically realizing a copy within an island can rescue a construction from a locality violation.⁴⁶ This, I propose, is what happens in (65a). Movement out of the island takes place. The construction is saved from a locality violation by phonologically realizing a copy within the island. (Note that the typing requirement is irrelevant since we are not dealing with a true question.) The only difference is that in (68b) the copy is realized as a resumptive pronoun and in (65a) the full copy is pronounced. Pesetsky (1997, 1998) proposes that in (68b) the tail of the chain is pronounced as a pronoun because of a constraint that requires copies that are not heads of chains to be as close to unpronounced as possible. Pronunciation of ϕ -features—that is, pronominal pronunciation—is the minimal pronunciation. The resumptive pronoun strategy cannot be employed in (65a) because quite generally, echo *wh*-phrases cannot be associated with resumptive pronouns.⁴⁷ Since a resumptive pronoun is not an option, a full copy is pronounced.

⁴⁶ For PCA treatments of resumptives, see Fox 1994 and Pesetsky 1997, 1998. We can implement the PF effect on locality by assuming that PF realization removes the star assigned to copies owing to locality violations (see Chomsky and Lasnik 1993). Note that resumptives in English cannot occur in intermediate positions, as shown by **The worker who you recently heard the rumor him that they had treated badly*. This may be a result of more general constraints on pronoun placement in English: resumptives can occur only in positions in which pronouns in general can occur in the language.

⁴⁷ Resumptive pronouns sound best with relative clauses. Speakers who do accept them in true questions seem to accept them only with heavily D-linked *wh*-phrases (see Boeckx 2001). Thus, English **Who did the company fire the employee that treated him badly?* is judged unacceptable. Notice also that, according to Ileana Comorovski (personal communication), Romanian does not have true island-rescuing resumptive pronouns at all.

Why can't both the head and the tail of the *wh*-chain in (65a) be phonologically realized? Nunes (1999) argues that pronouncing both the head and the tail of a chain would violate Kayne's (1994) Linear Correspondence Axiom (LCA) so that the chain could not be linearized. Nunes considers the head and the tail of a chain to be nondistinct for the purposes of the LCA. As a result, realizing both phonologically would result in a conflicting ordering. Suppose we decide to delete neither the head nor the tail of the chain created by movement of *ce* in (65a). Given the LCA, the *wh*-phrase will have to both precede (because of *ce* in Spec,CP) and follow (because of *ce* in the base-generated position) other words in the sentence. Linearization therefore fails. What about the resumptive pronoun examples? Why do they not violate the LCA? It seems plausible that the *wh*-phrase and the resumptive pronoun are not nondistinct for the purposes of the LCA since they do not receive the same phonological realization. The LCA is then not violated in (68b).

Finally, let me point out that Franks's and Pesetsky's approaches to PF realization of chains are very similar. Forcing a copy that is not the head of a chain to be as close to unpronounced as possible entails that if there is no reason to pronounce it, it will not be pronounced. For Franks (and the same seems to hold for Pesetsky) the relevant reasons are phonological, which makes sense given that copy pronunciation is a PF phenomenon. In principle, the head of a chain can always be pronounced. Whenever copies (by *copies* I mean everything but the head of a chain) are all deleted, the head of the chain must be pronounced to avoid violating recoverability of deletion. When a copy must be fully realized phonologically for independent reasons, the head must be deleted to avoid violating the LCA. With partial phonological realization of a copy, as with resumptive pronouns, the head of the chain cannot be deleted. Its deletion would violate recoverability of deletion—a *wh*-phrase and a pronoun obviously cannot be considered nondistinct for recoverability-of-deletion purposes.

To sum up, phonological and syntactic exceptions to the obligatoriness of *wh*-fronting in MWF languages can be accounted for by adopting either the PCA or the Move F analysis. (Under the PCA there are actually no purely syntactic exceptions.) At this point we cannot completely conclusively choose one of the two analyses. The PG data, however, do favor the PCA.⁴⁸ Determining which analysis is more adequate has important consequences for analyzing in-situ *wh*-phrases in non-MWF languages.

3 Conclusion

I have shown that MWF languages do not display uniform behavior with respect to *wh*-movement, thus eliminating this type of language from the crosslinguistic typology concerning the behavior of *wh*-phrases with respect to *wh*-movement in multiple questions. This leaves three types, represented by English, French, and Chinese. MWF languages are scattered across these three types: Bulgarian is a MWF counterpart of English, SC of French, and Russian of Chinese. The behavior of MWF languages with respect to *wh*-movement is camouflaged by the focus requirement, which

⁴⁸ Recall that the Move F analysis can be restated in terms of Chomsky's (2001) Agree. The PG data seem particularly problematic for the Agree version of this analysis.

forces all *wh*-phrases to move overtly independently of *wh*-movement. I have shown that there are three classes of exceptions to the obligatoriness of *wh*-fronting in MWF languages: semantic, phonological, and syntactic. The semantic exceptions are explained away by the focus nature of the additional movement of *wh*-phrases in MWF languages. I have considered two explanations for phonological and syntactic exceptions: one based on the Move F hypothesis and one based on the possibility of pronouncing lower copies of nontrivial chains sanctioned by PF considerations. The latter provides evidence for the copy theory of movement. The exceptions to the obligatoriness of *wh*-fronting have led me to posit a new type of in-situ *wh*-phrase, distinct from in-situ *wh*-phrases in non-MWF languages.

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