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Multiple Sluicing and Superiority in Serbo-Croatian

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0. Introduction

In this paper I discuss the contrast between Serbo-Croatian (SC) examples in (1).

- (1) a. A: Neko je udario nekog.
somebody is hit someone
'Somebody hit someone.'
- b. B: Ko koga?
who whom
'Who hit whom?'
- c. B: ?*Koga ko?
whom who

The utterances of the speaker B in (1) are short distance null C matrix *wh*-questions. The sentence is good if the higher *wh*-phrase appears first in the linear order and the lower *wh*-phrase follows, as in (1b), while the reverse order of *wh*-phrases is unacceptable, as in (1c). In this paper I show that the contrast between (1b) and (1c) is due to Superiority, which, on the face of it, is an unexpected result, since Superiority effects do not normally show up in SC short distance null C matrix questions (see Bošković 1996, 1997, 1998), as illustrated in (2).

- (2) a. Ko koga voli?
who whom loves
'Who loves whom?'
- b. Koga ko voli?
whom who loves

I show that (1) involves sluicing with multiple remnants, which I will call multiple sluicing, and that contrast between (1a) and (1b) falls out naturally if one adopts Economy of Derivation account of Superiority and the theory of lexical insertion proposed in Bošković (1996, 1997, 1998). Furthermore, I show that sluicing has to be analyzed as movement of *wh*-phrases to SpecCP followed by PF deletion of IP.

1. Multiple Sluicing in Serbo-Croatian

Consider the following data from Serbo-Croatian:

- (3) A: Neko je nekad ovdje sakrio blago.
 somebody is somewhere here hidden treasure
 'Somebody hid the treasure here at some point in the past.'
- a. B: Ko kad?
 who when
- b. B:?* Kad ko?
 when who
- (4) A: Neko je negdje sakrio blago.
 somebody is somewhere hidden treasure
 'Somebody hid the treasure somewhere.'
- a. B: Ko gdje?
 who where
- b. B:?* Gdje ko?
 where who
- (5) A: Neko je nekoga sakrio ovdje.
 somebody is somebody hid here
 'Somebody hid somebody here.'
- a. B: Ko koga?
 who whom
- b. B:?* Koga ko?
 whom who

The Speaker B utterances in (3)-(5) are multiple matrix questions with a null C. All of them contain only *wh*-words, with the rest of the sentence material elided by some sort of ellipsis. On the face of it, the ellipsis process can be either gapping or multiple sluicing, which has been argued to exist, among others, in Japanese (Takahashi 1994, Nishigauchi to appear), Korean (Kim 1997), and to some extent in English (Bolinger 1978, Merchant 1996, Richards 1997). I will show here that the ellipsis process in these examples is sluicing rather than gapping.

Jackendoff (1971) and Takahashi (1994) point out that gapping in English is unacceptable with conjuncts other than *and*:

- (6) *Bill ate the peaches, but Harry the grapes.

The conjunction in (6) is *but*, and the sentence is degraded. SC also has a restriction on what conjunction can appear in unambiguously gapping constructions. The conjunction has to be *a*, the counterpart of English *and*. With *ali* 'but' the sentence is bad, as illustrated in (7).

- (7) a. Ivan je pojeo jabuku, a Petar breskvu.
Ivan is eaten apple, and Petar peach
'Ivan ate an apple, and Petar a peach.'
b. *Ivan je pojeo jabuku, ali Petar breskvu.
Ivan is eaten apple, but Petar peach
'Ivan ate an apple, but Petar a peach.'

Sluicing is possible with *ali* 'but', as illustrated in (8).

- (8) Ivan je vidio nekoga, ali ne znam koga.
Ivan is seen somebody but not know whom
'Ivan saw somebody, but I don't know whom.'

It is also possible to construct a parallel example to (8) with multiple remnants. *Ali* 'but' is still possible:

- (9) Neko je vidio nekog, ali ne znam ko koga.
somebody is seen somebody, but not know who whom
'Somebody saw someone, but I don't know who whom.'

The example in (9) then seems to be an instance of multiple embedded sluicing and not gapping. In fact, embedded gapping is unacceptable (Lasnik and Saito 1992), while such sluicing is perfect, as illustrated in (10a) for gapping and in (10b) for sluicing.

- (10) a. *John likes Mary, and I think that Bill Jennifer, too.
b. John likes somebody, but I don't know who.

The same situation obtains in Serbo-Croatian. Gapping with subordination is not possible:

- (11) *Ivan je volio Mariju, a mislim da Goran Vesnu.
Ivan is loved Marija, and think that Goran Vesna
'Ivan loved Marija, and I think that Goran loved Vesna.'

Sluicing with subordination, on the other hand is possible, as illustrated in (8). Furthermore, the example in (9) with multiple remnants is perfect, just like the sluicing example in (8) and unlike the gapping example in (11). Thus, the process of eliding all the sentence material except *wh*-phrases in (9) is not gapping.

Lasnik (in press) shows that matrix sluicing is possible in English.

- (12) A: Mary loves somebody? B: Who?

Sluicing is also allowed in matrix contexts in SC, just as in English:

- (13) A: Marija je voljela nekog.
 Marija is loved somebody
 'Marija loved somebody.'
 B: Koga?
 whom
 'Whom?'

If it is possible to have embedded sluicing with multiple remnants, then one would expect it to be possible to have matrix sluicing with multiple remnants. The Speaker B utterances in (3)-(5) seem to be exactly examples of sluicing with multiple remnants.

Furthermore, as pointed out by Ross (1969), in single remnant sluicing, the remnant *wh*-phrase in the sluiced conjunct usually corresponds to an indefinite DP in the antecedent conjunct as in (10b), but it does not have to, for example, it does not correspond to anything visible on the surface in (14).

- (14) He is writing, but I don't know what.

The same situation obtains with multiple remnants in SC: neither in embedded nor in matrix clauses do they need to have corresponding indefinite phrases in the antecedent.

- (15) a. Marko je nastupao, ali ne znam kad gdje.
 Marko is performed, but not know when where
 'Marko performed but I don't know when he performed where.'
 b. A: Marko je nastupao.
 Marko is performed
 B: Kad gdje?
 when where

With gapping, the antecedents of remnants must be present overtly, as illustrated in (16).

- (16) a. Marko je nastupao juče, a Petar jutros
 Marko is performed yesterday, and Peter this morning
 'Marko performed yesterday, and Peter performed this morning.'
 b. * Marko je nastupao, a Petar danas.
 Marko is performed, and Peter today

Given these facts, I conclude that examples in (3)-(5) are instances of multiple matrix sluicing, and not gapping.

One curious thing about the multiple sluicing examples in (3)-(5) is that they exhibit strict ordering of *wh*-phrases. If the higher *wh*-phrase appears first, the sentence is good, as in (3a)-(5a), but if the lower *wh*-phrase appears first, the sentence is bad, as in

(3b)-(5b). This is curious because if the Speaker B responds with full sentences without ellipsis, there are no constraints on linear ordering of *wh*-phrases, as shown in (18)-(19).¹

- (17) A: Neko je nekad ovdje sakrio blago.
 somebody is some time ago here hidden treasure
 'Somebody hid the treasure here at some point in the past.'
- a. B: Ko je kad ovdje sakrio blago?
 who is when here hidden treasure
- b. B: Kad je ko ovdje sakrio blago?
 when is who here hidden treasure
 'Who hid the treasure here when?'
- (18) A: Neko je negdje sakrio blago.
 somebody is somewhere hidden treasure
 'Somebody hid the treasure somewhere.'
- a. B: Ko je gdje sakrio blago?
 who is where hidden treasure
- b. B: Gdje je ko sakrio blago?
 where is who hidden treasure
 'Who hid the treasure where?'

¹ One might suggest at this point that the order of *wh*-phrases in (3b)-(5b) is unacceptable because it does not follow the order of the indefinites in the antecedent sentence. However, this is not the case, as illustrated in (i) for (3a):

- (i) A: Nekad je neko ovdje sakrio blago.
 Some time ago is somebody here hidden treasure
 'Somebody hid the treasure here at some point in the past.'
- B: a. ? Ko kad?
 who when
 b.?* Kad ko?
 when who

We can see that it is still better to have the 'higher *wh*-phrase first in the linear order, although even this response to the antecedent sentence of the speaker A is a bit unusual. The counterparts of (3a) and (5a) behave in the same way as the counterpart of (3a) in (i).

An anonymous NELS reviewer suggests that it is worth checking whether the elliptical answers in the gapping pattern behave in the same way with respect to ordering.

- (ii) Ko je koga udario?
 who is whom hit
 'Who hit whom?'

- (iii)a. Marija Petra.
 Mary-nom Peter-acc
 b. ?* Petra Marija.
 Peter-acc Mary-nom

While it is true that (iiib) is an unnatural answer to (ii), this fact is not relevant to the examples in (3)-(5), since the non-elliptical source of (iiib) has the same kind of degradation as an answer to (ii), which is not the case with corresponding *wh*-constructions (cf. 18):

- (iv) ?* Petra je udarila Marija.
 Peter-acc is hit Marija-nom
 'Marija hit Peter.'

A degraded status of (iiib) and (iv) as responses to (ii) may be due to constraints on the ways in which the information in a response to a question is organized, as discussed by Kuno (1982) and Kuno and Takami (1993).

- (19) A: Neko je nekoga ovdje sakrio.
 somebody is somebody here hidden
 'Somebody hid somebody here.'
- a. B: Ko je koga ovdje sakrio?
 who is whom here hidden
- b. B: Koga je ko ovdje sakrio?
 whom is who here hidden
 'Who hid here whom?'

The constraint on linear ordering of *wh*-phrases in examples (3)-(5) is reminiscent of the Superiority Condition. If the linear ordering of the *wh*-phrases in these examples is constrained by some version of Superiority, then the question is why Superiority effects emerge in these matrix null C questions, when they don't normally do in other null C matrix questions. In order to give an answer to this question, I first have to examine current analyses of Superiority with multiple *wh*-fronting.

2. Multiple *Wh*-fronting Languages and Superiority Effects

Rudin (1988) shows that there are two types of multiple *wh*-fronting languages. One type is *Bulgarian type* which includes languages such as Bulgarian and Romanian. Rudin argues that in this type of languages all fronted *wh*-phrases are in SpecCP, forming a constituent, as in (20a). The other type of languages is *Serbo-Croatian type*, which includes languages such as SC, Czech, Polish or Russian. According to Rudin, in SC type of languages, the fronted *wh*-phrases do not form a constituent; only the first *wh*-phrase is located in SpecCP, while other fronted *wh*-phrases are adjoined to IP, as shown in (20b).

- (20) a. [_{CP} Koj kogo [_{IP} vižda]] (Bulgarian)
 who whom sees
 'Who sees whom?'
- b. [_{CP} Ko [_{IP} koga [vidi]]] (SC)
 who whom sees

One of Rudin's arguments for her conclusion concerns the fact that non-*wh* material cannot split fronted *wh*-phrases in Bulgarian, while it can in SC, as shown in (21).

- (21) a. Zavisi od tova, koj kogo prŭv e udaril. (Bulgarian)
 depends on it who whom first is hit
 'It depends on who whom hits first.'
- b. *Zavisi od tova, koj prŭv kogo e udaril.
 depends on it who first whom is hit
 'It depends on who hits whom first.'
- c. Zavisi od toga ko koga prvi udari. (SC)
 depends on it who whom first hits
 'It depends on who hits whom first.'
- d. Zavisi od toga ko prvi koga udari.
 depends on it who first whom hits
 'It depends on who hits whom first.'

Another difference between the two types of languages observed by Rudin (1988) is that fronted *wh*-phrases are subject to strict ordering constraints in Bulgarian type, but not in SC type, as illustrated in (22).

- (22) a. [CP Koj kogo [vižda]] (Bulgarian)
 who whom sees
 ‘Who sees whom?’
 b. *[CP Kogo koj [vižda]]
 whom who sees
 c. [CP Ko [IP koga [vidi]]] (SC)
 who whom sees
 ‘Who sees whom?’
 d. [CP Koga [IP ko [vidi]]]
 whom who sees

One question that immediately arises is why there are differences in constraints on linear ordering of *wh*-phrases between Bulgarian and SC types. As for Bulgarian type, Rudin (1988) and Bošković (1996, 1997, 1998) argue that if adjunction to SpecCP in Bulgarian proceeds to the right, i.e. if the *wh*-phrase that is first in the linear order is the one that moves first to SpecCP, the strict ordering of fronted *wh*-phrases in Bulgarian follows from the Superiority condition: the highest *wh*-phrase has to move first; if not, there is a Superiority effect. As for SC type, Rudin concludes that Superiority does not hold in SC by looking only at the examples of the type in (22c-d), i.e. short distance null C matrix questions, and offers an analysis in which SC type languages never yield Superiority effects. However, Bošković (1996, 1997, 1998) shows that while it is true that in examples like (2), SC does not show Superiority effects, in many other configurations Superiority effects do arise in SC. These configurations include embedded question contexts, long distance questions and matrix questions with overt C, as shown in (23).

- (23) Long-distance questions:
 a. Ko si koga tvrdio da je istukao?
 who are whom claim_{2sg} that is beaten
 ‘Who do you claim that beat whom?’
 b. ?*Koga si ko tvrdio da je istukao?
 whom are who claim_{2sg} that is beaten
 Embedded contexts:²
 c. Ko koga voli, taj o njemu i govori.
 who whom loves, that-one about him even talks
 ‘Everyone talks about the person they love.’

² Bošković (1996, 1997, 1998) avoids giving indirect questions as examples of embedded questions because such questions involve an interfering factor. As Bošković notes, indirect questions formally do not differ at all from matrix questions in SC. As a result, there is always a danger that they might be analyzed as matrix questions, with the superficial matrix clause treated as an adsentential. Instead, Bošković gives examples of correlative and existential constructions which, as shown by Izvorski (1996, in press), also contain embedded questions. Bošković (1997) does show that when this interfering factor in indirect questions is controlled for, true indirect questions in SC also exhibit Superiority effects.

- d. ?*Koga ko voli, taj o njemu/o njemu taj i govori.
whom who loves, that-one about him even talks
- e. Ima ko šta da ti proda.
has who what that you sells
'There is someone who can sell you something.'
- f. *Ima šta ko da ti proda.
has what who that you sells
- Root questions with overt C:
- g. Ko li šta kupuje.
who C what buys
'Who on earth buys what?'
- h. *Šta li ko kupuje?
what C who buys

The ordering of fronted *wh*-phrases in SC long-distance questions, embedded questions and matrix questions with overt complementizers is not free. In these contexts, the highest *wh*-phrase has to appear first in the linear order, otherwise the sentence is bad, just as in Bulgarian. Bošković argues that if, like in Bulgarian, the *wh*-phrase which is first in the linear order moves first, the ungrammaticality of (23b, d, f, h) is due to a violation of the Superiority Condition. SC is then not exempt from the Superiority Condition. As Bošković points out, even if we did not have this empirical evidence, to claim that SC is exempt from the Superiority Condition would be conceptually problematic, since the Superiority Condition has recently been argued to follow from the Principles of Economy (Bošković 1997, Cheng 1997, Kitahara 1997) which are presumably universal, and therefore not a plausible locus of cross-linguistic variation.

So, Superiority effects do not show up in SC short distance null C matrix questions, while they do in a number of other contexts, including short distance overt C matrix questions, embedded contexts, and long-distance questions. The question is what is responsible for this ambivalent behavior of SC with respect to Superiority and what is responsible for the difference between Bulgarian and SC with respect to Superiority. There are at least two recent analyses in the literature attempting to offer an answer to this questions. One of them is given in Bošković (1996, 1997, 1998), and the other in Richards (1998).

Bošković (1996, 1997, 1998) bases his account on an interesting parallelism between SC and French. French exhibits the same division between different types of question as SC, but with respect to a somewhat different phenomenon. Exactly in those contexts in which SC exhibits Superiority effects, overt *wh*-movement is obligatory in French, while in those contexts in which SC does not exhibit Superiority effects, overt *wh*-movement does not need to take place in French (see Bošković for the relevant data in French). The curious behavior of SC with respect to Superiority can then be explained if one assumes that SC is a French-type language with respect to when it must have overt *wh*-movement. Long-distance, embedded and overt C questions in SC then exhibit Superiority effects because in these contexts, overt *wh*-movement must take place in SC, just as in French. Short distance null C matrix questions in SC do not exhibit Superiority effects

because, just like in French, these questions need not involve overt *wh*-movement. As a result, Bošković argues, SC *wh*-movement is well-behaved with respect to Superiority: Whenever there is overt *wh*-movement in SC, Superiority is operative. The only difference between French and SC null C matrix questions is that in SC, *wh*-phrases still must front for some reason that is independent of checking the [+*wh*] feature of C. On the question of motivation for this fronting in null C matrix question, Bošković follows Stjepanović (1995, 1998), who shows that in these questions *wh*-phrases appear in the positions in which contrastively focused material occurs. Fronted *wh*-phrases that do not end up in SpecCP then undergo focus movement. The focus licensers in SC are Agr (AgrS and AgrO) and C. The question that arises at this point is why *wh*-movement is obligatory in French and SC embedded, long distance and overt C matrix questions, unlike in null C matrix questions. Bošković argues that a possible answer to this question lies in lexical insertion possibilities provided by the current minimalist framework (Chomsky 1995), and Chomsky's (1995) definition of strong features. Bošković argues that lexical insertion, or, more precisely Merger, can occur in LF under well-defined conditions: the element to be merged must be phonologically null since LF cannot deal with phonological features, and Merger must be at the top of the tree, since, by definition, Merger must expand the structure. Even an element with a strong feature can be inserted in LF, given Chomsky's (1995) definition of strong features, where strong features are defined derivationally as objects that cannot be tolerated by the derivation and need to be eliminated immediately upon their introduction into the structure. So, according to Bošković, French and SC do not have obligatory overt *wh*-movement in null C matrix questions because a null C with a strong *wh*-feature, the trigger for *wh*-movement, can be inserted in LF here. In embedded, long distance and overt C matrix questions, LF C insertion is blocked (see Bošković for discussion). C has to be present in the overt syntax, hence overt *wh*-movement is obligatory in this case. As a result, in such multiple questions Superiority effects show up if the *wh*-feature is not checked in the most economical way, given the Economy account of Superiority adopted by Bošković. The most economical way to check the [+*wh*] feature is through the shortest movement possible, i.e. by moving the *wh*-phrase that is closest to C. The movement of a *wh*-phrase to SpecCP triggers Spec-head agreement with C, checking the *wh*-feature, so that the *wh*-phrase that moves there first necessarily checks it. In Bošković's theory, overt *wh*-movement to Spec triggers Superiority effects, while focus movement does not. Bošković argues that focus movement does not violate Superiority if (a) with focus movement strong features are on the moved elements and (b) the Economy account of Superiority is adopted, whereby every feature has to be checked in the most economical way, i.e. through the shortest movement possible. The different behavior between *wh*-movement and focus movement with respect to Superiority is thus explained in terms of where the formal inadequacy driving the movement lies.³

³ Note that Bošković thus slightly relaxes Chomsky's (1995) derivational definition of strong features under which strong features must be eliminated immediately upon insertion into the tree. Under Bošković's proposal the strong features must be eliminated as soon as it is possible to eliminate them. Bošković (1998), however, offers a slight reanalysis of these facts in an attempt to bring his analysis into conformity with Chomsky's proposal that strong features must be eliminated immediately upon insertion into the tree, i.e., that they reside only in the target. Thus, Bošković (1998) proposes that the focus feature resides in the target, and in order to account for the lack of Superiority effects with focus movement, he proposes that the focus feature has an Attract all F property, i.e., it must attract all elements with the relevant fea-

Wh-movement

F	<i>wh</i> -phrase ₁	<i>wh</i> -phrase ₂	<i>wh</i> -phrase ₃
+wh	+wh	+wh	+wh
strong	weak	weak	weak

With *wh*-movement, the functional head F has a strong feature which has to be checked in the most economical way, i.e. through the shortest movement possible. Hence, if *wh*-phrase₁ does not move first to check it, a Superiority effect will result.

Focus movement

F	<i>wh</i> -phrase ₁	<i>wh</i> -phrase ₂	<i>wh</i> -phrase ₃
+focus	+focus	+focus	+focus
weak	strong	strong	strong

With focus movement, the strong feature resides in *wh*-phrases. The order in which the *wh*-phrases are checking their strong focus feature against F, i.e., the order of movement to the FP projection, is irrelevant. The derivation in which *wh*-phrase₁ checks its feature before *wh*-phrase₂ and the derivation in which *wh*-phrase₂ checks its focus feature before *wh*-phrase₁ are equally economical, since the same nodes (more precisely, maximal projections) are crossed to check the strong focus feature of the *wh*-phrases. So, for Bošković, the ambivalent behavior of SC with respect to Superiority is a result of the interaction of several aspects of grammar, including the Economy account of Superiority, lexical insertion possibilities and the nature of strong features.

As far as Bulgarian type languages are concerned, which exhibit Superiority effects in all contexts, Bošković argues that this is so because in these languages, C is a phonological affix, and it therefore must be inserted in the overt syntax. Recall that LF insertion of elements which are not phonologically null is not possible, since LF cannot deal with phonological information. So, a *wh*-phrase in Bulgarian always undergoes overt movement to SpecCP to check a strong *wh*-feature. Given the Economy account of Superiority, this will be the highest *wh*-phrase. As discussed above, however, Rudin (1988) shows that in Bulgarian multiple questions all *wh*-phrases are in SpecCP, not just the highest one. The question is why other phrases also move to SpecCP. Bošković argues that the answer to this question lies in focus movement. Just like in SC, all *wh*-phrases in Bulgarian must undergo focus movement. The focus licenser in Bulgarian is C. So, the highest *wh*-phrase has to move first in order to satisfy the strong *wh*-feature of C, at the same time checking its own focus feature. Other *wh*-phrases then move to check their own focus features. Focus movement does not trigger Superiority effects, since the focus feature is on the moved elements, just like in SC.⁴ As a result, in Bulgarian, the highest *wh*-phrase has to move first, and after that the order of movement of *wh*-phrases is free, as shown in (24).

ture. The analysis of the data that I will be concerned with below does not hinge on the locus of the focus feature, i.e., whether it is in the moved elements or the target.

⁴ The same state of affairs obtains if C, the target of focus movement, has a strong feature with Attract All property, as Bošković (1998) suggests may be the case.

- (24)a. Koj kogo kak e tselunal?
 who whom how is kissed
 'Who kissed whom how?'
 b. Koj kak kogo e tselunal?
 c.* Kogo kak koj e tselunal?

As mentioned above, an alternative analysis of the different behavior of SC and Bulgarian with respect to Superiority and the ambivalent behavior of SC in this respect is offered by Richards (1997). For Richards (1997), the difference between SC and Bulgarian with respect to Superiority lies in the interaction of several aspects of grammar, in particular the Principle of Minimal Compliance in (25), and a constraint on Attract, given in (26). The definition of Attract is given in (27).

- (25) Principle of Minimal Compliance (PMC)
 For any dependency D that obeys constraint C, any elements that are relevant for determining whether D obeys C can be ignored for the rest of the derivation for purposes of determining whether any other dependency D' obeys C.
- (26) Shortest
 A pair P of elements $\{\alpha, \beta\}$ obeys Shortest iff there is no well-formed pair P' which can be created by substituting γ for either α or β , and the set of nodes c-commanded by one element of P' and dominating the other is smaller than the set of nodes c-commanded by one element of P and dominating the other.
- (27) Attract
 An attractor K attracts a feature F, creating a copy α' of an element α containing F, and Merging α' with K. The relations between α' , K, and F must all obey Shortest.

Shortest constrains the relation between the attractor K and the attracted feature F, forcing the attractor to attract the nearest possible feature. This is what Richards calls Shortest Attract. Shortest also constrains the relation between F and the copy α' of α , requiring that movement be as short as possible. In this way, Shortest prevents movement of F past an attractor which could attract F, and also forces movement to be to the closest available landing site. This is what Richards calls Shortest Move. Richards argues that the interaction between PMC and Shortest, as well as the assumption that fronted *wh*-phrases occupy multiple specifiers of C, can account for the Superiority effects in Bulgarian. In the case of multiple *wh*-phrases, given Shortest, C first attracts the highest *wh*-phrase. At this point PMC renders the attractor C immune to Shortest, i.e. it turns off Shortest Attract. As a result, C can attract the leftover *wh*-phrases in any order. Furthermore, Richards argues that in the case of movement to multiple specifiers, an inner specifier is closer than an outer specifier. He also argues that although Shortest Attract is, Shortest Move is not affected by PMC. As a result, every subsequent movement of *wh*-phrases will be to an inner specifier. This is what Richards calls "tucking in". So, in the case of *wh*-phrases in (28), C first attracts wh_1 and PMC turns off Shortest Attract. As a result, C can attract either wh_2 or wh_3 . If at this point it attracts wh_2 , wh_2 will move and tuck in, i.e. it will move to a lower specifier of C. Then wh_3 tucks into the lowest specifier of C. The resulting structure is given in (29). If, on the other hand, after attracting wh_1 first, C attracts wh_3 next, wh_3

will tuck into the lower specifier. After this *C* attracts *wh*₂, which moves to the lowest specifier. The resulting structure is given in (30).

(28) *C wh*₁ *wh*₂ *wh*₃

(29) [*wh*₁ [*wh*₂ [*wh*₃ [*C*]]]]

(30) [*wh*₁ [*wh*₃ [*wh*₂ [*C*]]]]

As illustrated in (24), this is exactly the range of facts observed in Bulgarian. Richards' analysis thus works well for Bulgarian. As we have seen above, SC exhibits different behavior with respect to Superiority than Bulgarian. Unlike Bulgarian, SC lacks Superiority effects in short distance null *C* matrix questions, while in all other contexts it exhibits Superiority effects just like Bulgarian. Now, in order to explain why Superiority effects do not show up in SC short distance null *C* matrix questions, Richards argues that SC has a way of moving *wh*-phrases other than *wh*-movement to SpecCP. Local movement of *wh*-phrases is A-scrambling. In particular, Richards argues that SC allows arbitrarily many attractors within IP projections, which are responsible for scrambling *wh*-phrases. So, in case of two *wh*-phrases, as in (31), one possible derivation is when there are two such attractors (*X* and *Y* in (31)). The lower attractor *Y* attracts the higher *wh*₁. Now the higher attractor *X* must attract a *wh*-phrase and the only *wh*-phrase it can attract is the lower *wh*₂.

(31)a. [_{CP} *C* [_{XP} *X* [_{YP} *Y* [*wh*₁ *wh*₂]]]]

At this point *C* attracts *wh*₂, since it is the closest *wh*-phrase. This derivation, therefore, yields a sentence in which the originally lower *wh*-phrase moves to SpecCP without causing a Superiority effect, as in (2b). Given this mechanism, it is easy to think of a derivation where originally higher *wh*-phrase ends up in SpecCP, an expected result, as in (2a).

Thus, in Richards' theory, an escape hatch from Superiority in these examples is A-scrambling. In long distance questions, however, Richards argues that this escape hatch is not available, and that this is why multiple long-distance *wh*-fronting exhibits Superiority effects, as in (23b). However, although this analysis accounts for the contrast between short distance and long distance multiple questions in SC, unfortunately, it cannot account for the full range of facts in SC pertaining to Superiority. In particular, it predicts no Superiority effects in embedded questions and matrix questions with overt *C*, contrary to the fact.⁵ Furthermore, I will show below that the data in (3)-(5) argue against the mechanism of arbitrary many attractors in SC short distance questions.

Having outlined these analyses of Superiority with multiple fronting, let us go back to the SC examples in (3)-(5). One prediction of Bošković's analysis is that if in SC null *C* multiple matrix questions, which do not normally exhibit Superiority effects, a null *C* can be forced to be present overtly, the Bulgarian pattern should emerge, i.e. a Superiority effect should show up. I will show that this is true of the data in (3)-(5).

⁵ See also Bošković (1998) who shows that the assumption that SC has A-scrambling is problematic.

3. Multiple Sluicing and Superiority in SC

Recall that I have argued that the data in (3)-(5) are instances of multiple sluicing. Sluicing with a single remnant is standardly analyzed as *wh*-movement followed by IP deletion (Ross 1969, Rosen 1976, Takahashi 1994, Lasnik in press), or basegenerated null IP licensed by a [+*wh*] C agreeing with its specifier and filled with linguistic material by LF copying (Levin 1982, Chung-Ladesaw-McCloskey 1995, among others). So, both types of accounts agree that the remnant *wh*-phrase is in SpecCP. As far as multiple sluicing is concerned, there are analyses in which multiple remnants are also placed in SpecCP, such as Takahashi (1994). If we combine the proposal that *wh*-phrases in sluicing examples are in SpecCP with Bošković's analysis of the ambivalent behavior of SC with respect to Superiority, then Superiority effects in multiple matrix sluicing do not come as a surprise.

Recall that Bošković (1996, 1997, 1998) argues that the ambivalent behavior of SC with respect to Superiority effects is caused by the absence or presence of C in overt syntax. If C has to be present in overt syntax, Superiority effects show up (embedded, long-distance and overt C contexts). If it does not need to be present in overt syntax, i.e. if it can be inserted in LF (null C in matrix questions), no Superiority effects show up. Now, if *wh*-phrases in sentences undergoing sluicing are in SpecCP, then C must also be present in overt syntax in such sentences. The strong *wh*-feature it carries has to be eliminated in the most economical way. The most economical way is for it to be checked by the highest *wh*-phrase. This means that the highest *wh*-phrase has to move first. As far as the movement of the lower *wh*-phrase is concerned, recall that Bošković argues that all *wh*-phrases in SC have a focus feature which needs to be checked by a focus licenser. Furthermore, Bošković (1996) shows that in the case of overt insertion of C in short distance matrix questions, C can act as a focus licenser in SC. Given this, it is not implausible to claim that the lower *wh*-phrase in these examples moves to SpecCP to check its focus feature. This is exactly the Bulgarian pattern discussed above.

Note, furthermore, that the data in (3)-(5) provide us with a tool of teasing apart Bošković's and Richards' analyses of Superiority effects with multiple *wh*-fronting outlined above. Recall that in order to explain the lack of Superiority effects in SC short distance matrix questions, Richards proposes that SC allows arbitrarily many attractors in IP projections. As shown above, this mechanism of arbitrarily many attractors, which Richards argues is A-scrambling, is able to scramble *wh*-phrases rendering their order opposite of the original order. C then attracts the closest *wh*-phrase, which due to scrambling may be the originally lower *wh*-phrase. Superiority effects are then voided. Notice now, that in the sluicing examples in (3)-(5) which are short distance questions, the escape hatch from Superiority in the form of arbitrarily many attractors in IP projections is still available. Given this mechanism, nothing prevents these phrases from being first scrambled and then attracted by C with the subsequent deletion of IP. As a result, Superiority effects should not show up, counter to fact. SC, therefore, cannot allow the mechanism of arbitrarily many attractors in IP projections, proposed by Richards (1997). Then we are left with Bošković's analysis of these facts.

Note also that given the Economy of Derivation account of Superiority, which Bošković (1997) argues is superior to alternative accounts based on multiple *wh*-fronting construction, and given SC data in (3)-(5), any account of sluicing as basegenerated IP licensed by a [+*wh*] C agreeing with the *wh*-phrases in its specifier (possibly followed by LF copying) cannot be maintained. Under this approach, *wh*-phrases are also basegenerated in SpecCP, so any phrase could be basegenerated first, checking the *wh*-feature of C. Superiority effects then should not show up. If *wh*-phrases, however, have to undergo overt movement, as in the *wh*-movement and PF deletion of IP approach, then Superiority effects are expected to emerge in case the highest *wh*-phrase does not move first to check the *wh*-feature.

So far I have examined the behavior of SC multiple matrix sluicing with respect to only two remnant *wh*-phrases. I have shown that SC exhibits the Bulgarian pattern in this context with respect to Superiority. If SC follows the Bulgarian pattern in multiple matrix sluicing cases, then it should also behave like Bulgarian when more than two *wh*-phrases are involved. As shown in (24), if there are more than two *wh*-phrases in Bulgarian, Superiority cares only about the highest one, while it disregards other *wh*-phrases in the sentence. So, in a sentence with three *wh*-phrases, the highest *wh*-phrase must move first, and then the order of movement of the other two *wh*-phrases is free. As expected, SC behaves like Bulgarian in this respect:

- (32) a. Ivan je nekog nekako poljubio.
Ivan is someone somehow kissed
'Ivan kissed someone somehow.
- b. Koga kako?
whom how
- c. ?*Kako koga?
- d. Neko je nekog nekako poljubio.
somebody is someone somehow kissed
'Somebody kissed someone somehow.'
- e. Ko koga kako?
who whom how
- f. Ko kako koga?
- g. *Kako ko koga?
- h. *Koga ko kako?

The contrast between (32b) and (32c) shows that prior to movement to SpecCP, *kako* 'how' starts lower in the structure than *koga* 'whom' (see Bošković 1997 for an explanation). The acceptability of (32e) and (32f) shows that if the highest *wh*-phrase moves first, the order of other *wh*-phrases is free, while (32g) and (32h) show that we get unacceptable constructions if the highest *wh*-phrase does not move first.

3. Conclusions

By looking at multiple sluicing constructions in SC I have provided evidence for the theory of lexical insertion proposed in Bošković (1996, 1997, 1998), which allows LF

insertion of lexical elements under well-defined conditions. I have also provided support for the Economy of Derivation account of Superiority. Furthermore, I have shown that, given the Economy of Derivation account of Superiority, sluicing cannot be analyzed as involving null IP basegeneration with a [+wh] C agreeing with its specifier (possibly followed by LF copying). Rather it should be analyzed as involving overt *wh*-movement and PF deletion of IP. We thus have here evidence that the PF deletion account of ellipsis is superior to the LF copying account.

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