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WHAT DO SECOND POSITION CLITICIZATION, SCRAMBLING AND MULTIPLE WH-FRONTING HAVE IN COMMON?

Sandra Stjepanović, Ph.D.

University of Connecticut, 1999

Serbo-Croatian (SC) is a language with very free word order; almost any permutation of words in a sentence is allowed. There are surprising exceptions to this: clitics and multiple *wh*-fronting. The order of clitics with respect to other elements in a sentence is very rigid. Clitics have to occupy the second position (2P) in a sentence, where 2P is roughly either after the first word or after the first phrase. *Wh*-phrases also have restrictions on the positions in which they can occur in a sentence. In most cases, no *wh*-element can remain in-situ. This thesis is a study of word order in SC, both of its freedom and restrictions on it, within the Minimalist Program. Various word orders in SC correlate with particular information structure and prosodic properties. Paying a close attention to them reveals two different types of word reordering: one to remove nonpresupposed elements from the position where a new information focus element needs to be, in order to receive the main sentential stress by the NSR, as formulated in Zubizarreta (1998) (defocalized phrase displacement), and the other one to move

identificational (Kiss 1998) focus elements into positions in which they can be licensed (focus movement). I show that defocalized phrase displacement structures are not derived only by syntactic mechanisms, but that PF plays a role too, in the form of deciding which copy of an element is pronounced. There is no optional movement in syntax, appearances of optionality are derived by virtue of pronouncing the relevant copy of an element, as decided by the NSR. Focus movement, whose subcase, I show, is multiple *wh*-fronting, involves movement of focused elements into discourse oriented projections in overt syntax. These focus elements have to be licensed also prosodically, and PF considerations of stress assignment help explain why there is no appearance of optionality here. When it comes to the second position cliticization, evidence is presented that the 2P requirement must be a matter of PF, and not syntax. A PF filter put forth in Bošković (1997) ensures the pronunciation of just those copies that will result in the 2P placement.

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APPROVAL PAGE

Doctor of Philosophy Dissertation

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Chapter 1

Introduction

1.1. Background

Serbo-Croatian (SC) is a language with a great freedom of word order, to the extent that almost any permutation of words in a sentence is allowed. There are surprising exceptions to this, though: clitics and multiple *wh*-fronting. The order of clitics with respect to other elements in a sentence is very rigid. Clitics have to occupy the second position of their sentence, where the second position is roughly either after the first word or after the first phrase in a sentence. *Wh*-phrases also have restrictions on the range of positions in which they can occur in a sentence, although their order with respect to other elements in a sentence is freer than that of clitics. In the majority of cases, *wh*-elements cannot stay in their in-situ position. This thesis is a study of word order in SC, both of its freedom and restrictions on it, within the Minimalist Program (Chomsky 1993, 1995, 1998).

Starting assumptions of the Minimalist program developed in Chomsky (1993, 1995, 1998) is that language consists of lexicon and a computational system, which is embedded into two performance systems: articulatory-perceptual (A-P) and conceptual-intentional (C-I). There are two linguistic levels (PF and LF), which serve as interfaces of the computational system with the performance systems (see, however, Epstein et al. 1998 for a different view in which the performance systems access computation directly, thus eliminating the interface levels of PF and LF, and Boeckx 1999c for comparisons of

these models). Each linguistic expression generated by the computational system is a pair of representations at PF and LF (P, L), where P provides instructions to the A-P system, while L provides instructions to the C-I system. A computation of an expression converges at an interface level if the expression is legible there, consisting only of elements that provide instructions usable by the performance systems. Otherwise, the computation of an expression crashes. A computation converges if it converges at both interfaces. In addition, a derivation of an expression must be optimal, i.e., it must meet some general considerations of simplicity referred to as economy conditions. One such economy condition is the Last Resort, a condition which prohibits superfluous steps in a derivation.

The computational system must be able to build expressions of language. To do this, it uses the operation of Merge. Merge takes two objects A and B and creates a new object K out of them. Merge is inescapable on the weakest empirical grounds. A fact about language, however, is that elements of an expression often appear displaced from the position in which they get interpreted. In order to achieve this displacement, the computational system uses another operation, which has taken different guises over the years, as Move or Attract. Move/Attract (any version of it) is subject to the Last Resort Condition, i.e. it can happen only if there is a reason for it to happen. The reason is satisfying morphological properties either of the target or the element undergoing Move/Attract, or both (there are varied views on this, see Chomsky 1993, 1995, Lasnik 1995a, Bošković (to appear b)). So, unmotivated and optional Move/Attract is not allowed.

Free word order poses a challenge for the minimalist view, in particular Last Resort. In the descriptions of free word order languages, it is usually assumed that one word order is basic, and all others are derived from it by displacing the relevant elements, which is descriptively called scrambling. As mentioned, the displacement property is achieved by movement, which is driven by a need to satisfy morphological properties either of the target of movement or the element undergoing movement. However, all morphological properties are already satisfied in the ‘basic’ word order, as illustrated in (1a) from Japanese, which in the minimalist framework raises the question of what the driving force is behind the displacement in scrambled word orders, as the one in (1b) from Japanese.

- (1)a. John-ga hon-o katta.
 John-nom book-acc bought
 ‘John bought a book.’
- b. Hon-o John-ga katta.
 book-acc John-nom bought
 ‘John bought a book.’

In the early generative tradition, scrambling has been viewed as a stylistic operation, applying postsyntactically (Ross 1967, Chomsky 1972). This view, however, has largely been abandoned, ever since Saito and Hoji (1983) and Saito (1985) showed with respect to Japanese, that scrambling has syntactic effects, and therefore must be a part of syntactic component. Saito (1985) argued that scrambling in Japanese is an optional operation in the sense that it does not happen for case reasons, nor does it create an operator-variable chain. For the most part, scrambling in Japanese has been analyzed

as an instance of overt movement, which with the onset of the minimalist views immediately started raising issues of driving force and Last Resort - if scrambling is overt movement, not driven by anything, why can it happen at all? Minimalist considerations have therefore set off efforts to bring scrambling into conformity with Last Resort (see Bošković and Takahashi 1998, Saito and Fukui 1998, among others).

Scrambling in other languages than Japanese does not always exhibit the same properties as scrambling in Japanese. So, scrambling in German and Dutch, for example, has been shown to be more restricted than scrambling in Japanese, in that it is clause-bound, unlike in Japanese (see Grewendorf and Sabel 1999 for a clear exposition). In fact, it may probably be somewhat of a mistake to use the same term here, since the word reordering phenomena in Japanese and these other languages may not be the same phenomenon at all. Furthermore, Diesing (1992, 1997) and Jelinek and Diesing (1996) have made a claim with respect to scrambling in German, Egyptian Arabic and Yiddish that only certain kinds of DPs can be scrambled. In these languages, a specific noun phrase must scramble (except when the noun phrase bears special focus interpretation), while a non-specific one cannot. Given this observation, they propose an account in which scrambling in these languages is semantically driven, i.e., the relevant elements must scramble out of their VP by LF, so that certain semantic conditions are satisfied. Neeleman and Reinhart (to appear), on the other hand, have observed with respect to scrambling in Dutch/German that it is not tied so much to the fact whether the object is specific or non-specific, but rather to prosodic properties, in particular to the PF considerations of main sentential stress, and information structure. The relationship between information structure, prosody and scrambling has also been observed in

languages such as Italian (Calabrese 1982, 1992, Zubizarreta 1998, Cardinalletti 1998, among others), Spanish (Zubizarreta 1998), or Catalan (Vallduvi 1992). In this thesis I will show that free word order possibilities in SC illustrated above are closely tied to these considerations as well.

1.2. Outline

Paying a close attention to the correlation of various word orders with information structure and prosodic properties reveals that there are two types of word reordering in SC: one to scramble out nonpresupposed elements in the sentence in order to leave an element in focus to receive the main sentential stress, and the other one to move focused elements into positions in which they can be licensed. I will refer to the former type as defocalized phrase scrambling, and to the latter as focus movement. Grammar employs different mechanisms in the derivation of these different scrambling types.

In Chapter 3, I examine defocalized phrase scrambling. Defocalized phrase scrambling is found in what I call neutral focus structures, as in neutral answers to a *wh*-question, illustrated in (2).

(2)a. Ko tuče Petra?

who beats Petar

‘Who is beating Petar?’

b. Petra tuče Marija.

Petar beats Marija

‘Marija is beating Petar.’

In these sentences, the element in focus is on the surface found in the final position. The focused element in these sentences merely conveys new non-presupposed information. In Kiss's (1998) terminology, this is information focus. One characteristic of such sentences is that the focused element always follows the presupposed material, and is the element that receives the main sentential stress. The order of presupposed elements preceding the focused element is relatively free, as illustrated in (3b-c), which are neutral focus answers to the question in (3a).

(3)a. Šta Marija radi Petru?

what Marija does Petar

'What is Marija doing to Petar?'

b. Marija Petra tuče.

Marija-nom Petar-acc beats

'Marija is beating Petar.'

c. Petra Marija tuče.

Petar-acc Marija-nom beats

'Marija is beating Petar.'

In (3b-c), the verb, which is focused, is in the final position, while the presupposed elements precede it. Either order of presupposed elements is fine. This state of affairs raises a number of questions: Why is the element conveying new information in the final position in the sentence, with the presupposed elements preceding it? How does the focused element get into this position? Why is the order of the presupposed elements free? Why are these sentences perceived as neutral answers to the given questions? In Chapter 2, I try to provide an answer to some of these questions. In particular, I follow

Chomsky (1971), Jackendoff (1972), Cinque (1993), Reinhart (1995), Neeleman and Reinhart (to appear), and Zubizarreta (1998) among others, in assuming that focus is identified through stress. Roughly, a constituent can be identified as focus, if it contains the main stress of the sentence. There is a default stress assignment mechanism which automatically assigns main stress to a sentence. The stress assignment mechanism is a version of the Nuclear Stress Rule of Chomsky and Halle (1968). In particular, I adopt Zubizarreta's (1998) formulation of it. If a constituent receives stress by the Nuclear Stress Rule, it can be identified as neutral focus. I show that SC patterns with languages such as Spanish and Italian, according to Zubizarreta, in that the NSR always assigns the main stress to the most embedded element of the sentence. In order to explain how the element in focus ends up in the most embedded position of the sentence, first I show that verb and its arguments move out of VP in SC. Furthermore, I assume the copy and deletion theory of movement, and pursue a line of thought present also in Bobaljik (1999) and Bošković (forthcoming) among others, that syntax only establishes a relationship between certain positions in a sentence by creating a chain of identical copies, while the job of deciding which copy is pronounced at PF, or interpreted at LF is the job of PF and LF, respectively. When it comes to the question of how PF makes a decision of which copy should be pronounced and which copies should be deleted, I pursue a proposal, similar to those put forth in Franks (1998) and Bošković (forthcoming), in which PF pronounces heads of chains unless this leads to a PF violation, or unless a PF mechanism requires otherwise. I argue that one of the PF mechanisms which takes part in the decision of which copies should be pronounced is the default stress assigning mechanism. This is necessary because there are cases in which the focused element which needs to

receive the main sentential stress assigned by the NSR would not end up in the most embedded position, if the highest copies in non-trivial chains are pronounced, as standardly assumed, unless perhaps some optional movement is postulated. In these cases, instead of postulating problematic optional movement, I argue that the appearance of optionality of movement arises from choosing to pronounce a lower copy of the moved element, as determined by the default stress assigning mechanism. In particular, the system is set up in such a way to allow the default stress assigning mechanism (as formulated in Zubizarreta 1998) to choose the lowest copy of the focused element to be pronounced, and to delete all copies of other elements that follow it. As a result, the focused element ends up in the final position on the surface, while the presupposed elements precede it. I argue that the relative free word order of presupposed elements is a result of the range of functional projections attracting them.

Since in this system, the appearance of optionality of movement stems from the choice of pronunciation of the lower copies, as determined by PF mechanisms, the question is whether there are cases of movement in SC which do not display such appearance of optionality. There are two such cases: second position cliticization, and multiple *wh*-fronting.

Second position cliticization is a topic of Chapter 2. The distribution of clitics in a sentence is surprisingly very rigid. As mentioned above, in most cases, clitics have to occur in the second position of their clause. There is a long standing debate as how this is achieved. One line of approaches advocates that the placement of clitics in the second position is primarily a matter of syntax, while the other line of approaches argue that the

primary role is played by PF. In Chapter 2, I present evidence against the syntactic approaches to the second position effect in SC.

Common to all syntactic accounts of the second position effect in SC is that they depend on locating clitics in a cluster in a structurally fixed position and very high in the tree, usually in C, or in a maximal projection just below C, so that there is enough space for only one element to precede the clitic cluster. I will show, however, that such a view of clitic placement is untenable by considering some facts about the behavior of clitics in VP ellipsis and clitic climbing. These facts show that, although clitics seem to be in a cluster, syntactically each clitic may still be in a separate maximal projection. Furthermore, they show that the position of clitics in syntax cannot be very high in the tree. If syntax is not responsible for placing clitics into the second position, then how is it achieved? I show that the data presented in this chapter fit into Bošković's (1995a, to appear, 1999a) approach, where the second position effect is a result of lexical properties of clitics which must be satisfied at PF. As a result, just those copies which will ensure the fulfillment of this PF requirement will be pronounced. Crucially, in syntax, clitics are not treated any different from other elements in the sentence. They undergo movement to the functional projections, just as all other elements do. Thus, syntax just establishes a relationship between the relevant positions, creating a chain, and PF decides which copies in a non-trivial chain will be pronounced. The appearance of rigid ordering of clitics with respect to other elements in the sentence is due to PF. The considerations of stress assignment, which I argue in Chapter 3 are responsible for certain amount of optionality exhibited, are irrelevant here, because clitics do not bear stress, and the default stress

assignment mechanism is set up in such a way that it will never consider them for the assignment of one.

Chapter 4 is concerned with multiple *wh*-fronting, which also shows restrictions with respect to word order, although they are not as strict as those of clitics. In the majority of cases, *wh*-phrases in SC cannot stay in their in-situ position, and have to be in some position preceding the verb. In order to see why multiple *wh*-fronting is obligatory in the sense of the system advanced in Chapter 3, it is first necessary to find out what the job of syntax is in deriving these sentences, and then see how PF interprets the structures given by syntax.

As shown by Rudin (1988) and Bošković (1995a, to appear a, forthcoming), not all instances of fronting of *wh*-phrases in SC are instances of familiar *wh*-movement to SpecCP for checking of a *wh*-feature in C. Given this, a question immediately arises as to where in these cases *wh*-phrases are moving and what the driving force behind this movement is. An attempt to find an answer to this question will reveal that there is a parallelism between *wh*-phrases and contrastively focused material with respect to the positions they occupy in the sentence. Both contrastively focused elements and *wh*-phrases move to preverbal projections hosting discourse related material. In many languages, it has been noted that *wh*-phrases share the syntactic behavior of foci (Somali, Chadic, Aghem, Basque, Hungarian, Omaha, Quetchua, Greek, and Finnish (see, among others, Horvath 1986, Rochemont 1986, and papers in Kiss 1995), and Romanian (Göbbel 1998)). I argue that SC can be added to this list, i.e., SC multiple *wh*-fronting is a sub-case of focus movement. Pursuing the idea that syntax only establishes a relationship between the relevant positions in a sentence, by creating identical copies, and PF

exclusively decides which copies should be pronounced, in the light of the theory proposed in Chapter 3, the question is why these movements have an appearance of being obligatory, i.e., why in most cases, the highest copies resulting from multiple *wh*-fronting and focus movement are necessarily pronounced. I attribute this to considerations of stress assignment, which are different from those discussed in Chapter 3 involving the default stress assignment mechanism. These phrases carry the so called emphatic or contrastive stress. I suggest, that if the feature attracting these elements to the relevant projections is associated in PF with prominence which results in the so called emphatic or contrastive stress, then this stress has to be realized on the highest copy. In order for this stress to be realized, then, this copy has to be pronounced.

Chapter 2

Second Position Cliticization

2.1. Introduction

SC has a very free word order, to the extent that almost any permutation of words in a sentence is possible, as illustrated in (1) for a sentence with a subject, verb and complement in it:

(1) Petar čita knjigu.

Petar reads book

‘Petar is reading a book.

b. Petar knjigu čita.

Petar book reads

c. Knjigu Petar čita.

book Petar reads

d. Knjigu čita Petar.

book reads Petar

e. Čita knjigu Petar.

reads book Petar

f. Čita Petar knjigu.

reads Petar book

There is an exception to this: clitics. The order of clitics with respect to other elements of the sentence is very rigid. They have to occupy the second position of the

sentence, where the second position is roughly either after the first phrase or the first word of the sentence.

The problem of second position cliticization in SC has attracted much attention among syntacticians, phonologists and morphologists. The major issues debated with respect to the second position cliticization puzzle focus on whether the placement of clitics in the second position is achieved exclusively by exploiting movement in syntax, or whether some postsyntactic word reordering is necessary as well.

In this chapter I will present some new data from SC, which will show that second position clitic placement cannot be exclusively a job of syntax, and that it has to involve some postsyntactic phonological mechanisms as well. The data presented will help determine which approach to the second position cliticization is the correct one. It will also help explain why, in the light of the theory of free word order presented in Chapter 3, clitics have such rigid ordering requirements with respect to other elements in the sentence. The problem of how clitics end up in the second position of a sentence is an interesting one, because finding a solution to it seems to require investigating the interplay of several modules of grammar. Investigating phenomena that cut across several modules of grammar means, among other things, investigating the ways in which these modules interact. This can help shed more light on such theoretical issues as whether language is derivational or not, whether it admits any global properties or look-ahead, etc.

2.2. Second Position Cliticization in SC

SC clitics are found in the second position of their sentence, which is standardly defined as either after the first word or after the first constituent of the sentence (see Browne 1975). This is illustrated in (2).¹

- (2) a. Tu knjigu *su* *mi* dali.
 that book-ACC are me-DAT given
 ‘They gave that book to me.’
- b. Tu *su* *mi* knjigu dali.
 that are me-DAT book-ACC given
 ‘They gave that book to me.’

The sequence of clitics within a cluster conforms to the general pattern in (3):

- (3) *li*-AUX-DAT-ACC-GEN-REFL-*je*

The question particle *li* is always initial, auxiliaries immediately follow except the third person singular auxiliary *je* ‘is’, which appears finally. Pronominal clitics follow auxiliary clitics (except *je*), with a dative clitic preceding an accusative clitic, the accusative clitic preceding the genitive clitic, and all of these preceding the reflexive clitic.

Locating clitics in any other position than second position leads to ungrammaticality, as illustrated in (4).

¹ Throughout the chapter all clitics will be italicized.

- (4)a. *Mi Marijinoj prijateljici *smo ga* dali.
 we Marija's friend-DAT are it-ACC given
 'We gave it to Mary's friend.'
- b. *Mi *smo* Marijinoj prijateljici *ga* dali.
 we are Marija's friend-DAT it-ACC given
 'We gave it to Mary's friend.'
- c. Mi *smo ga* Marijinoj prijateljici dali.
 we are it-ACC Marija's friend-DAT given
 'We gave it to Mary's friend.'

The sentences in (4a-b) illustrate the second position effect. There have been several lines of analyses proposed in the literature to account for this effect in Serbo-Croatian. They can be classified as phonological or syntactic, with further subdivisions, as outlined in Bošković (1997, forthcoming)²:

(a) The strong syntax approach: Syntax is fully responsible for the phenomenon of second position cliticization in SC. Phonology plays no role in determining the second position of clitics. Some of the proponents of this approach are Franks and Progovac (1994), Progovac (1996), Roberts (1994), Wilder and Čavar (1994a, b).

(b) The strong phonology approach: Phonology is fully responsible for second position cliticization. This approach relies on heavy word reordering taking place at PF. All clitic placement is accomplished by phonological processes, in particular, by applying Move in

² As pointed in Bošković (forthcoming), there are several other interesting approaches to second position cliticization in SC (Phillips 1996, Anderson 1993, Zec and Inkelas 1990, among others) that cannot be easily assigned to the categories given here, since they differ from the works cited below in some basic assumptions concerning the nature of the phonology-syntax interface and/or lexical insertion of clitics. I won't discuss such approaches here.

phonology. The best known advocate of this approach is Radanović-Kocić (1988, 1996).

(c) **The weak syntax approach:** Movement of clitics takes place in syntax, but a small amount of word reordering is still allowed to take place in PF. In particular, if clitics end up in a sentence initial position in syntax, under certain well-defined conditions they can move to the second position in phonology. Some of the advocates of this approach are Halpern (1992, 1995), Embick and Izvorski (1997), Percus (1993), Schütze (1994), and King (1996).

(d) **The weak phonology approach:** Phonology plays a dominant role in accounting for the second position effect. Under this approach, the second position requirement is a morphophonological requirement on clitics. All relevant movements of clitics take place in syntax. Phonology plays a passive filtering role by ruling out syntactically well-formed sentences which violate this morphophonological requirement. The principal proponent of this approach is Bošković (1995a, forthcoming).

In this chapter, I present evidence against both the strong and the weak syntactic accounts to the second position effect in SC. Let me therefore sketch these accounts in more detail first.

2.2.1. Syntactic Accounts of the Second Position Cliticization

2.2.1.1. Strong syntax account

As mentioned above, strong syntax accounts accomplish the clitic placement into the second position completely in overt syntax. Clitics move in overt syntax to a

structurally high position, allowing only one element to precede them. At the output of syntax to phonology, clitics cannot end up sentence initially. Strong syntax accounts can be split in two types with respect to how they prevent clitics from ending up in the sentence initial position.

On one side there are accounts such as Roberts (1992) (see also Rivero 1994b and Dmitrova-Vulchanova 1995). Roberts considers clitics to be located in the head position of Voice Phrase, which is a complement of C. To prevent clitics from ending up in the sentence initial position, Roberts posits a strong feature in C which can be checked either by a head or by a phrase of any type. One and only one element needs to move to C to check this feature, which leaves the clitics in the second position. Furthermore, the strong feature in C is a property of only a matrix clause C, an embedded clause C does not have this feature. This is so, because, in embedded clauses, clitics normally follow the complementizer *da* 'that', as illustrated in (5a). If there was a strong feature in C, then an element should move in front of *da* to check it, and sentences in which X(P)+*da*+clitics should be good, counter to fact, as illustrated in (5b).

(5)a. Ivan je mislio da *mu ga je* Zoran dao.

Ivan thought that him-dat it-acc is Zoran given

'Ivan thought that Zoran gave it to him.'

b. * Ivan je mislio Zoran da *mu ga je* dao.

Ivan is thought Zoran that him-dat it-acc is given

'Ivan thought that Zoran gave it to him.'

Another type of strong syntax approach allows some phonological information to be taken into consideration in order to prevent clitics from ending up sentence initially.

This information is the enclitic status of SC clitics. The proponents of this type are Progovac (1996), Rivero (1991, 1994a) and Wilder and Čavar (1994). For Progovac (1996), clitic cluster is in C, and in those constructions where clitics are going to end up in the sentence initial position, as a last resort, one element has to move in front of them to ensure that this does not happen. In constructions where an element has to move independently in syntax, such as *wh*-movement, this type of movement of an element in front of clitics is not possible, since it is a violation of the Last Resort Condition. This correctly rules out sentences in (6):

(6) * Koga vidio je Zoran.

whom seen is Zoran

‘Who did Zoran see?’

In this type of strong syntax accounts, clitics are placed in the second position in syntax; all movement is happening in syntax, but as we have seen, some of it is prosodically motivated. In these accounts, then, syntax has to look ahead to the needs of phonology.

2.2.1.2 Weak Syntax Accounts

In weak syntax accounts, clitics are again in a structurally high position, leaving room for only one element to precede them. In constructions, where elements have to move independently in front of clitics (e.g. *wh*-fronting constructions), clitics are going to end up in the second position in syntax, and nothing further needs to be said. In the cases where this does not happen, however, syntax cannot do anything extra in order to place clitics in the second position, i.e., it cannot move elements in front of clitics, as in strong

syntactic accounts outlined above. The weak syntax accounts thus do allow clitics to end up sentence initially in overt syntax, unlike strong syntax accounts. If a clitic cluster does end up sentence initially at the output of syntax, it is a job of phonology to place it in the second position. There is a special phonological operation responsible for this -- Prosodic Inversion. Prosodic Inversion (PI) was first formulated by Halpern (1992, 1995) as follows:

- (7) For a DCL [directional clitic], X, which must attach to a μ [phonological word] to its left (respectively right),
- a. If there is a μ , Y, comprised of material which is syntactically immediately to the left (right) of X, then adjoin X to the right (left) of Y.
 - b. else attach X to the right (left) edge of the μ composed of syntactic material immediately to its right (left).

The weak syntax accounts thus avoid the look-ahead problem, by letting phonology take care of the phonological requirements of clitics, and not syntax as strong syntax accounts do. While I will show that such mixed treatment of the second position cliticization in SC is necessary, there are doubts about the validity of an operation such as Prosodic Inversion. First, Progovac (1996) and Wilder and Čavar (1994a) have shown that in many cases for which PI was intended, PI is actually not necessary, since in these cases, clitics actually do not end up sentence initially in syntax. They have shown that only elements that can undergo syntactic movement in front of clitics, or be base-generated in front of clitics can precede the clitics, and therefore there is no need for any phonological reordering such as Prosodic Inversion. These are, for example, split constituent cases such as (8), because of which PI was originally proposed.

(8)a. Taj čovjek *je* volio Mariju.

that man is loved Marija

‘That man loved Marija.’

b. Taj *je* čovjek volio Mariju.

that is man loved Marija

‘That man loved Marija.’

Progovac (1996) and Wilder and Čavar (1994a) show that there is no need for Prosodic Inversion in (8b), since clitic placement after the first word in (8b) is a result of a general possibility of separating SC left branch elements in an NP from the head noun in syntax (i.e., SC allows violations of Left Branch Condition of Ross 1967), as illustrated in (9).

(9) Tog Marija čovjeka voli.

that Marija man-acc loves

‘Marija loves that man.’

Thus, in (8b), it is possible to move the determiner in front of the clitics in syntax, so that Prosodic Inversion is not necessary. And Bošković (forthcoming) has shown that the operation of Prosodic Inversion is seriously empirically flawed.

To sum up, the strong and weak syntax accounts differ in the possibility of having clitics sentence initially in overt syntax. The strong syntax accounts do not allow clitics to end up sentence initially in the overt syntax, while the weak syntax accounts do. The common grounds of the strong and weak syntax accounts are:

- a. clause-mate clitics are in a cluster in the same position in overt syntax
- b. the position is located high the tree, leaving room for only one element to precede the clitic cluster

- c. the position in which clitic cluster is located is structurally fixed.

In the following sections, I will present evidence which goes against the common characteristics of the strong and weak syntax accounts just outlined. The evidence is based on the behavior of clitics in clitic climbing and VP ellipsis constructions. The facts about clitic climbing show that clitics need not cluster together under the same node in overt syntax, i.e., that clitics can be found split in overt syntax. The facts about VP ellipsis show that when clitics seem to be in a cluster, each clitic may still be in a separate maximal projection. Furthermore, they show that the position of clitics cannot be very high in the tree.

2.3. Clitic Climbing in SC

Progovac (1996) shows that SC verbs fall into two basic groups with respect to what kind of complements they select: those which select opaque complements, or I-verbs (Indicative-selecting verbs), and those which select transparent complements (S-verbs, selecting Subjunctive-like complements). I-verbs are mostly verbs of saying, believing, and ordering, such as *kazati* 'say', *reći* 'say', *tvrditi* 'claim', *pretpostavljati* 'suppose', *vjerovati* 'believe', *narediti* 'order', etc. S-verbs are mainly verbs of wishing and requesting, such as *željati* 'wish', *htjeti* 'want', *moći* 'be able to', *tražiti* 'ask for', etc. S-verbs exhibit the properties of restructuring verbs in Romance, which allow dependencies and process that are normally limited to one clause to take place across clause boundaries.

For Serbo-Croatian, Progovac (1996) shows that such verbs allow clitic climbing

out of their complements, extend the domain for negative polarity licensing, etc. So, as shown by Progovac (1996), clitic climbing is possible out the complements of S-verbs ((11b)), but not I-verbs, ((10b))

- (10) a. Milan kaže da *ga* vidi. (I-verb complements)
 Milan says that him sees
 ‘Milan says that he sees him.’
- b. * Milan *ga* kaže da vidi.
 Milan him says that sees
 ‘Milan says that he sees him.’
- (11) a. Marija želi da *ga* vidi. (S-verb complements)
 Marija wants that him see
 ‘Marija wants to see him.’
- b. ? Marija *ga* želi da vidi.
 Marija him wants that see
 ‘Marija wants to see him.’

In (10b) the accusative clitic *ga* ‘him’ climbs to the matrix clause out of the complement of *kazati* ‘say’ and the sentence is bad. In (11b) the accusative clitic *ga* climbs to the matrix clause out of the complement of *željeti* ‘wish’ and the sentence is good. (12b) illustrates that possibility of climbing the whole cluster out of the complement of an S-verb to the matrix clause.

- (12) a. Marija želi da *mu ga* predstavi.
 Marija wants that him_{dat} him_{acc} introduce
 ‘Marija wants to introduce him to him.’

b. ? Marija *mu ga* želi da predstavi.

Marija *him_{dat} him_{acc}* wants that introduce

‘Marija wants to introduce him to him.’

What has not been noticed before, however, is examples such as (13).

(13) ? Marija *mu* želi da *ga* predstavi.

Marija *him_{dat}* wants that *him_{acc}* introduce

‘Marija wants to introduce him to him.’

In (13), the dative clitic *mu* ‘him’ climbs to the matrix clause. The accusative clitic *ga* ‘him’, however, remains in the embedded clause. So, climbing only one clitic, while leaving the other clitic in the embedded clause, is possible.

Note, furthermore, that the accusative clitic cannot climb over the dative clitic into the matrix clause. Example (14) clearly contrasts with (13).

(14) * Marija *ga* želi da *mu* predstavi.

Marija *him_{acc}* want that *him_{dat}* introduce

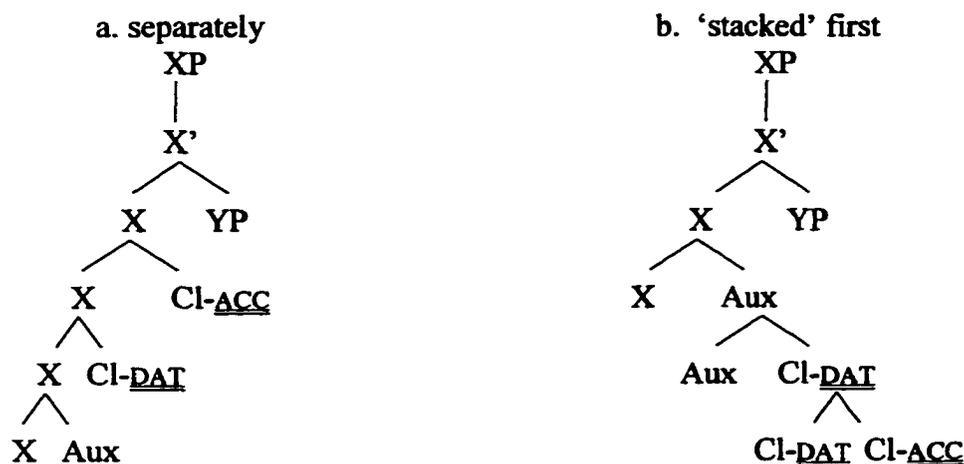
‘Marija wants to introduce him to him.’

The contrast between (13) and (14) can be interpreted as evidence that the dative clitic is originally in a higher position than the accusative clitic, and that (14) is bad due to the familiar relativized minimality violation, however this is instantiated.

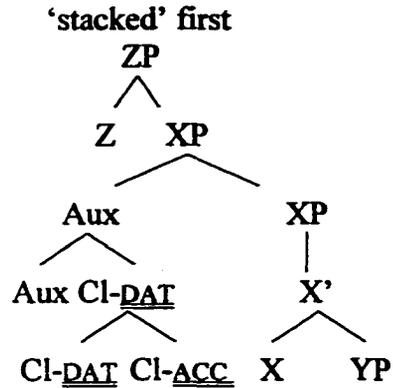
For the syntactic approaches the acceptability of examples such as (13), where clausemate clitics do not cluster together under the same node in syntax is unexpected. As mentioned above, syntactic approaches assume that clitics are located in a cluster under the same node very high in the tree. Crucially, all clitics in a sentence have to be in a cluster already in overt syntax. So, in (12b), under syntactic accounts, both the dative

clitic *mu* ‘him’ and the accusative clitic *ga* ‘him’ are clustering together in a very high position in the matrix clause, while in (12a), they are clustering together in a very high position in the embedded clause. That position is C (Franks and Progovac 1994, King 1996, Progovac 1996, Schütze 1994, Wilder and Ćavar 1994a,b), the head position of a phrase between C and I (Percus 1993, Roberts 1994), Spec position of a phrase between C and I (Rivero 1994) or adjoined to a phrase between C and I (Halpern 1992, 1993). In all syntactic accounts, clitics move to that position. There are two possible ways the movement of clitics to the relevant position can proceed. Clitics can all move to that position separately (only if it is a head position, though), as in (15a), or there can be stacking of clitics first, where the every clitic moves successive cyclically to the next higher clitic position, i.e., the lowest clitic in the structural position first adjoins to the next highest clitic, and then this small cluster adjoins to the next clitic, and so on until the last clitic is reached, and then the whole cluster moves to the relevant position high in the tree, as illustrated in (15b) and (16).

(15) If adjoined to a head:



(16) if adjoined to an XP:³⁴



Now, in (13) both clitics originate in the same clause. The dative clitic moves to the higher clause, skipping the position in the embedded clause where the accusative clitic moves.

In the case where all clitics move separately to the relevant head position high in the clause, the question is why it is possible for the dative clitic to skip the position in the embedded clause to which the accusative clitic moves. In other words, the question is why there is no violation of Rizzi's (1990) Relativized Minimality or Chomsky's (1995) Minimal Link Condition in this case. If translated into the minimalist terms where all movement is driven by feature checking, this means that in (12b), there is a feature that drives movement of both clitics to that high position in the matrix clause. The relevant feature can apparently be optionally present either in the embedded or in the matrix clause. Now, in (13) only the dative clitic moves to the matrix clause, while the

³ Adjunction of clitics separately to an XP cannot be allowed since it could result in the possibility of having other non-clitic elements that can adjoin to IP (for example, adverbs) intervene between clitics, resulting in the second position effect.

⁴ Note that I am pursuing a liberal reading of adjunction possibilities here, in order to push syntactic accounts as far as possible. However, the following things should be kept in mind: auxiliary clitics are for all intents and purposes heads, which means that in (15-16), all the clitics that adjoin to it must be heads. Given this, it is not clear how a head cluster in (16) can adjoin to an XP. But, as I said, I will gloss over

accusative clitic stays behind in the embedded clause. Given that there is a feature that drives the movement of the accusative clitic to the embedded position, then the question is why the dative clitic can skip this position where it can check the relevant feature without violating Relativized Minimality or Minimal Link Condition. A potential answer to solve this problem could be that the relevant feature on clitics which is checked against the matching feature in the head of the phrase to which all clitics are moving is interpretable. In Chomsky's (1995) system, interpretable features need not erase after checking, which means that they could be checked more than once. If this is true, then in (13), the dative clitic's feature which is checked against the strong feature in the embedded clause need not be erased, and one can imagine that the dative clitic can excorporate out of the head and move on to the relevant phrase in the higher clause to check the strong feature there, too. Such a scenario would probably solve the problem with sentences such as (13). Note, however, that it is not at all clear what kind of feature would drive movement of all clitics to the same position. Recall that clitics are elements of different types (auxiliaries, pronominals, interrogative particles), and it is not clear what kind of feature could be checked by these various elements. But if one grants the existence of such a feature, there is a further problem with the split clitic climbing constructions for the syntactic accounts under the view where all clitics are moving to the relevant head position separately. This problem has to do with sentences such as (14) with the accusative clitic moving over the dative clitic to the higher clause. These syntactic accounts would predict sentences such as (14) to be good, contrary to the fact. This is so because, both clitics first adjoin to the relevant head in the embedded clause.

these problems here, in order to push syntactic approaches as far as possible.

After adjoining to this head, both clitics are equally distant from any other position, and in principle, either of them could move further if necessary. This entails that in order to check the strong feature in the matrix clause, the accusative clitic could move to that position, but as (14) shows this is not possible. So, even under the most generous reading of the syntactic accounts under the view where all clitics move to the relevant structurally high position separately, one faces problems with an attempt to account for the data involving split clitic climbing constructions in (13-14).

Similar problems also arise with syntactic accounts under the view where there is ‘stacking’ of clitics prior to the movement to the relevant position high in the tree. Under this view, if all clitics must adjoin to each other prior of the movement of the whole cluster to the relevant high position, it is not clear why it is possible for this not to happen in constructions such as (13). On this point, one might argue, that clitics do adjoin to each other first, and then after the movement of the whole cluster to that position, the dative clitic excorporates and moves further on to check the strong feature in the matrix clause. But, then the same problem arises with examples such as (14) as in the accounts where clitics adjoin separately to a structurally high position. Either clitic should be able to move, but this is not possible, since (14) shows that the accusative clitic cannot move to the higher clause, leaving the dative clitic behind.

I conclude, therefore, that under syntactic approaches, where all clitics in a sentence have to be in a cluster under the same node high in the tree, it is difficult to account for the fact that the clitics can be found split as in (13).

An even more compelling piece of evidence against syntactic accounts comes from the behavior of clitics in VP ellipsis constructions.

2.4. VP Ellipsis in SC and Clitics

Serbo-Croatian allows VP ellipsis⁵, as illustrated in (17).⁶

- (17) ? Oni *su* kupili novine, a i vi *ste* ~~kupili~~
 they are bought newspapers, and also you are bought
~~novine~~ (takodje).
 newspaper too
 ‘They bought the newspapers, and you did, too.’

Example (17) contains two conjoined clauses. In the first conjunct, the verb is in the past tense, which, in SC, is a periphrastic form composed of a clitic form of the present tense of the auxiliary verb *biti* ‘to be’ and the past participle of the main verb. In the second conjunct of (17) the VP containing the participle *kupili* ‘bought’ and the direct object *novine* ‘newspaper’ is missing. The auxiliary *ste* ‘are’ is not missing. The SC example in (17) is parallel to the English example in (18) involving VP ellipsis:⁷

- (18) They have bought the newspapers, and Mary has, too.

⁵ Following convention, I call the process in question VP ellipsis, although I am open to the possibility that it can affect a maximal projection higher than VP, for example AgrOP.

⁶ There is a variation among speakers in acceptance of sentences with clitics preceding an ellipsis site. Out of six native speakers I have questioned, one did not accept any sentence with a clitic before an ellipsis site. In this paper I will focus on my own dialect and the dialects of my informants who accept these sentences. These dialects are spoken in Bosnia. The unacceptability of the relevant structures for some speakers may be related to the often observed phenomenon that sentences degrade when phonologically weak elements precede a trace or a gap (see Sag and Fodor 1995).

⁷ See Bošković (1995a, to appear a, 1997a), who argues that SC auxiliaries are base generated in a VP and may undergo overt raising to the head of a functional projection (T or AgrS).

2.4.1. Clitics in VP Ellipsis

Clitics in VP ellipsis construction exhibit behavior which is unexpected under the syntactic accounts. Let us look at sentences involving clitic clusters and VP ellipsis. Consider first the example in (19).

- (19) ? Mi *smo mu ga* predstavili, a i vi *ste mu*
 we are him-DAT it-ACC given and also you are him-DAT
~~*ga*~~ ~~*dali*~~, (takodje).
 it-ACC predstavili too
 ‘We introduced him to him, and you did, too.’

Example (19) contains two conjoined sentences. The verb *predstavili* ‘introduce’ takes a direct and an indirect object, which are both pronominal clitics. The clitic cluster thus includes a verbal clitic *ste* and two pronominal clitics *mu* and *ga*. In the second conjunct, VP ellipsis has occurred, eliding the participle together with the pronominal clitics. The verbal clitic *ste*, however, remains.

A number of researchers, including Lasnik (1995c, 1998), Chomsky and Lasnik (1993), and Chomsky (1995), have argued that VP ellipsis is a PF phenomenon targeting structures given by overt syntax (see also chapter 4 below, where I argue that sluicing, an ellipsis process which elides the whole IP, must be analyzed as PF deletion, see also Merchant 1999). If such an approach to VP ellipsis is adopted, the behavior of SC clitics in VP ellipsis is unexpected under syntactic approaches to second position cliticization.⁸

⁸ Note that even under LF copying analysis of VP ellipsis (see, among others, Williams 1977), there seem to be problems for syntactic approaches, since if clitics are adjoined to the same node in overt syntax in the first conjunct, and if some of them are missing in the second conjunct, for a complete identity between the

First, in syntactic approaches, as discussed above, the cluster is very high in the tree, much higher than a VP ellipsis site should be. VP ellipsis, therefore, should not be able to affect it. Suppose, however, that the cluster is located within an ellipsis site. Even in this case, eliding some clitics and leaving others behind should not be possible. As discussed above, in syntactic approaches clitics are adjoined to each other in overt syntax. So, in (19), the position of clitics just before the ellipsis occurs could be any of the possibilities in (15) or (16), depending on how the adjunction of clitics proceeds.

If only constituents can be elided, as is standardly assumed (see Lasnik 1995c, 1997), then ellipsis cannot affect only the dative and the accusative clitic in any of the structures in (15-16), since it would not be affecting a constituent. There is no way of having one clitic left and others elided. Given that the example in (19) is acceptable, the clitic auxiliary and pronominal clitics must be in different maximal projections.

Furthermore, pronominal clitics themselves may be in different maximal projections, as shown by the contrast between (20) and (21)⁹.

- (20) ? *Mi smo mu ga predstavili, a i vi*
 we are him-DAT him-ACC introduced, and also you
ste mu ga — predstavili, (takodje)
 are him-DAT him-ACC introduced too
 ‘We introduced him to him, and you did too.’

conjuncts to be obtained, it is a non-constituent that would have to be copied. Furthermore, since clitics have to be very high in the tree, it is not clear that VP (or AgrOP) ellipsis by LF copying can affect them at all.

⁹ (20) is slightly worse than (19), but it is still acceptable. See below for a possible reason for this slight contrast between (19) and (20).

- (21) * *Mi smo mu ga predstavili, a i vi*
 we are him-DAT him-ACC introduced, and also you
ste mu ga -predstavili, (takodje)
 are him-DAT him-ACC introduced too
 ‘We introduced him to him, and you did too.’

In (20), the accusative clitic is elided, while the dative clitic remains. The possibility of eliding the accusative clitic, without eliding the dative one, suggests that the two clitics are in separate maximal projections. Furthermore, (21) shows that eliding only the dative clitic, while leaving the accusative one behind, is not possible. There is a clear contrast between the sentence in (20) and the sentence in (21). This state of affairs is predicted if the dative clitic is in a maximal projection higher than the maximal projection in which the accusative clitic is located at the point when ellipsis takes place.¹⁰ Recall that a similar conclusion was also reached when discussing the split clitic climbing data.

The fact that clitics are found in distinct maximal projections is difficult for syntactic approaches to account for. As shown above, in these accounts, clitics crucially must be adjoined to each other or to the same node in overt syntax. Leaving only one of them within an ellipsis site then should not be possible. If it were possible not to adjoin clitics to each other or to the same node, leaving them in separate maximal projections in VP ellipsis constructions, the same situation could hold in an equivalent sentence without VP ellipsis. But, then, elements (for example adverbs) could intervene between clitics,

¹⁰ For a moment, I leave open what these maximal projections might be, one possibility being AgrIO and

which is not possible. Therefore, I will conclude that the syntactic accounts to the placement of SC clitics cannot be maintained.¹¹

2.4.2. *Is It VP Ellipsis?*

After I have first made the ellipsis data public (Stjepanović 1998), a different suggestion has been proposed to account for them. Progovac (to appear) tries to account for some of these facts in the way that would bring them in conformity with the strong syntax approach. Progovac argues that the process involved in constructions such as (19)

AgrDO.

¹¹ Franks (1998) suggests another view, which, he points out, could bring VP ellipsis data presented above in conformity with syntactic accounts. He adopts an approach put forth in Lasnik (1999) in which either movement or ellipsis can rescue a derivation with a strong feature. Namely, with Lasnik (1999), who follows Ochi (1998) and Chomsky (1995), he assumes that two chains are created in the process of movement for checking a feature. One chain is a formal feature chain, created by movement of the formal features of an element, and the other chain is the category and phonological feature chain, created by the movement of categorial and phonological features. Following, Lasnik (1999), Franks then assumes that it is possible to attract formal features of an element, and leave its phonological material in situ in case the phonological material is deleted at PF. So, he proposes that in a similar way, formal features of clitics can be attracted and checked against the relevant head, without pied-piping its phonological material. The phonological material can be left in situ and deleted by VP ellipsis at PF. This is an interesting suggestion. However, the problem is that, with syntactic approaches, Franks assumes that clitics cluster under the same node in overt syntax, but we have seen that clitics have to be split, independent of ellipsis (clitic climbing, see Bošković (forthcoming) for more examples of split clitic constructions). Furthermore, Lasnik's (1999) view of VP ellipsis in itself is not without problems, since it overgenerates in some cases in English. For some relevant discussion and empirical evidence, see Boeckx and Stjepanović (1999).

A difference between Franks and other syntactic approaches is that Franks (1998) does not assume that there is one fixed position high in the tree (for example C) to which all clitics always move. Following some recent work (Law 1991, Bošković 1997a, etc.), Franks (1998) assumes that only structure which is independently required is projected. In particular, following Bošković (1997a), Franks assumes that all clauses do not have a uniform categorial status. Furthermore, with Kayne (1994), Franks assumes that there can be only one Spec/Adjunct position per phrase. For Franks, all clitics are heads, and they move overtly to the highest position available in the clause, i.e., to the highest head position in the clause. As pointed by Bošković (forthcoming), however, this is problematic, since there is no principled way to ensure that SC clitics always move overtly to the highest head position projected. Furthermore, for Franks, clitics have strong features, which enables clitics to move successive cyclically to the relevant position. However, as pointed by Bošković (forthcoming), this assumption is also problematic, since it is not obvious how it could

is not VP ellipsis. In her judgment, while (19) is grammatical, (20) is ungrammatical. So, she does not allow leaving any pronominal clitics after the auxiliary clitic in the constructions in question. Based on this contrast, she proposes that no surface deletion rule applies to these data. Instead, according to Progovac, a silent VP *e* is basegenerated in the second conjunct. Progovac assumes that pronominal clitics in SC are generated in the corresponding argument positions within VP, hence they cannot be generated with a silent VP. Auxiliary clitics, on the other hand, are not generated within VP, but rather in a functional projection above VP, so they can surface with silent VPs. There is, however, reason to doubt the claim that the process involved in the example in (20) is not VP ellipsis.

There is evidence showing that SC example in (17) displays typical properties of VP ellipsis in English. First, as in English, the elided material always requires a linguistic antecedent, rather than pragmatically supplied antecedent, as illustrated in (22).

(22)a. [John is just about to jump from a cliff into the ocean. A group of people are trying to dissuade him from his intent. Peter comes by and says to the crowd:]

* Nemojte se brinuti, on neće skočiti

don't worry, he won't jump

b. Ivan će skočiti, a Petar neće skočiti

Ivan will jump and Peter won't jump

(22a) is ungrammatical although it is clear from the provided context that what Peter wants to say is that John will not jump. On the other hand, (22b) in which the 'missing' material is recovered from a linguistic context is grammatical. The elided material in SC

be implemented in the minimalist framework.

is then a surface anaphor, rather than a deep anaphor in the sense of Hankamer and Sag (1976), just as Hankamer and Sag (1976) argue is the case with VP ellipsis in English. The relevant process in SC then has the same discourse function as VP ellipsis in English.

Another property characteristic of VP ellipsis in English is the ambiguities which arise from interpreting the elided pronouns as bound variables (sloppy reading) or as freely referring (strict reading). Thus, (23) in English is ambiguous between a strict and sloppy reading of the elided pronoun *his*.

(23) John visited his mother, but Mary didn't.

Under the strict (referential) reading, it is understood that John visited the same woman that Mary didn't (i.e, his mother). Under the sloppy (bound variable) reading it is understood that John visited his mother, but that Mary didn't visit her own mother. The same range of ambiguities arises in SC constructions in question:

(24) Ivan je posjetio svoju majku, a Marija nije.

Ivan is visited his mother, and Mary didn't

'Ivan visited his mother, but Mary didn't.'

Just as English (23), SC (24) has both a strict reading under which Ivan visited the same woman that Marija didn't, and a sloppy reading under which Ivan visited his own mother, and Marija didn't visit her own mother.

Next, the process can affect not only the verb and the direct object, but all the other elements that are typically understood to be a part of a VP, such as indirect objects and VP adverbs:

- (25) Ivan je saopštio radosno Mariji da će Zoran doći, a Petar nije saopštio
 Ivan is told happily Marija that will Zoran come, but Petar isn't told
~~radosno — Mariji da će doći~~
 happily Marija that will come

‘Ivan happily told Marija that Zoran would come, but Petar didn’t.’

Although the participle, VP adverb, indirect object and direct object are missing in the second conjunct of (25), the second conjunct in (25) is still interpreted as though these elements are present, i.e., Petar didn’t happily tell Marija that Zoran would come.

Furthermore, assuming that examples in (19) involve empty VP base-generation, means treating them as involving a deep anaphor. There is further evidence that shows that examples in (19-20) do not involve empty VP base-generation, a deep anaphor.

Consider the following example:

- (26) Koga je Marija vidjela, a koga je Petar vidio?
 whom is Marija seen, and whom is Petar seen

‘Who did Marija see, and who did Peter?’

In the second conjunct of (26), the object *wh*-phrase has undergone *wh*-movement, while the main verb is missing. Now, if the second conjunct contains a base-generated null VP *e* and does not involve VP ellipsis, and if object phrases cannot be generated with silent VPs, as argued by Progovac (to appear), it is not clear how the object *wh*-phrase in the second conjunct of (26) can be generated. On the other hand, under VP ellipsis analysis, (26) is straightforwardly accounted for, since the VP of the second conjunct is present when *wh*-movement applies.

Furthermore, there is evidence which shows that examples such as (19-20) involve surface anaphora. Consider the following data, discussed by Grinder and Postal (1971) and Bresnan (1971).

- (27) a. I've never ridden a camel, but John has, and he says it was lame.
 b. * I've never ridden a camel, and it was lame.
 c. * I've never ridden a camel, but John did it, and it was lame.

As discussed by Grinder and Postal (1971), the contrast between (27a) and (27c) shows that (27a) must at some level contain the elided VP, and not simply a null VP without internal structure, a null counterpart of *do it* in (27c). This is so because in (27a) *it* picks out an antecedent from the elided VP, while in (27c) it cannot pick out an antecedent from *do it*. (27b) shows that *it* cannot pick out an antecedent from the first clause. Note now that SC patterns with English in this respect:

- (28)a. Ja nikad nisam jahala kamilu, i kaže da pro_i je šepala.
 I never am not ridden camel, Ivan is, and he-says that is it-lame
 'I've never ridden a camel, John has, and he says it was lame.'
 b. * Ja nikad nisam jahala kamilu, i pro šepala je.
 I never am-not ridden camel, and it-lame is

In (28a) *pro* can refer to *kamila* 'camel', but from the ungrammaticality of (28b) we see that in (28) *pro* is not picking out its antecedent from the first clause. In (28a), *pro* must be picking its antecedent from the second clause with a missing VP, more particularly from its missing object. This is then evidence that in the second clause the missing VP must have at some level the internal structure providing an antecedent for *pro*. The

'missing antecedent' test then shows that SC examples with missing VPs can be surface anaphors.

In order to support the null VP base-generation analysis, Progovac gives examples in (29), with only the verb missing, and both pronominal clitics present overtly:

(29) (*) Ja *sam mu ga* dala, a i ti *si mu ga* ~~dala~~, takodje.

I am him-dat it-acc given, and you are him-dat it-acc ~~given~~, too

'I gave it to him, and you gave it to him, too.'

In Progovac's judgment these sentences are unacceptable, the * next to the sentence is her judgment. Progovac (to appear) points out that these sentences are problematic for my VP ellipsis analysis, since under that analysis, an additional stipulation is needed to account for the degradation of (29), i.e., if clitics are in maximal projections higher than VP (Agr projections, as I will argue below), one has to claim that only Agr projections can be elided but not 'bare' VPs.

While it is true that sentences in which pronominal clitics remain together with an auxiliary clitic are somewhat degraded, such examples improve much if the pronominal clitics remain together with a non-clitic auxiliary, as illustrated in (30):

(30) Ja *sam mu ga* dala, a ti *mu ga* nisi ~~dala~~.

I am him-dat it-acc given, and you him-dat it-acc aren't ~~given~~

'I gave it to him, but you didn't give it to him.'

The fact that (30), with the pronominal clitics surfacing and the main verb elided, is completely acceptable indicates that the process in question is VP ellipsis, and not an empty VP base-generation. Furthermore, the fact that both pronominal clitics are spared by VP ellipsis in (30), and the sentence is good, shows that whatever contrast there is

between (29) and (30), the contrast is not due to a structural difference. I will suggest that the difference between (29) and (30) is due to a lack of a felicitous contrast between the two conjuncts in (29), which is necessary for VP ellipsis.

First, note that all examples from SC with the pronominal clitics surviving VP ellipsis are reminiscent of pseudogapping examples in English, in the sense of Lasnik (1995c, 1999a), as illustrated in (31).

(31)a. Tom bought a car, and Peter did a house.

According to Lasnik (1995, 1999), pseudogapping is VP ellipsis applying after the object moves out of the VP. This is why the object in (31) is spared by VP ellipsis. The main verb remains in the VP which is eventually elided, and this is why it is missing in (31). SC has the same kind of construction, as illustrated in (32).

(32) Petar je kupio auto, a Ivan je kuću.

Petar is bought car, and Ivan is house

‘Peter bought a car, and Peter did a house.’

(33) shows that both direct and indirect object together can survive VP ellipsis in SC:

(33) Petar je dao Mariji knjigu, a Zoran je Ivani cvijeće.

Petar is given Marija-dat book-acc, and Zoran is Ivana-dat flowers-acc

‘Petar gave Marija a book, and Zoran did Ivana flowers.’

Now, as Lasnik (1999) points out, pseudogapping constructions must involve strong contrastive focus. The element originating within VP which is spared by VP ellipsis needs to be in a strong contrast with the parallel element in the antecedent conjunct. This is why sentences such as (34), where no such contrast is obtained, are much less felicitous than (31).

(34) * Tom bought a car, and Peter did a car, too.

This is also a case with SC examples of pseudogapping, where non-clitic elements are VP ellipsis survivors:

(35)a. * Ivan je kupio auto, a i Marija je auto.

Ivan is bought car, and too Marija is car

‘Ivan bought a car, and Marija did a car, too.’

b. * Petar je dao Mariji knjigu, a i Zoran je Mariji knjigu.

Petar is given Marija-dat book-acc and too Zoran is Marija-dat book-acc

‘Petar gave Marija a book, and Zoran did Marija a book.’

So, (29) is similar to the English pseudogapping example in (31) in that a VP is elided after the pronominal clitics raise out of it. Recall, however, that clitics are phonologically weak elements, unable to bear any stress. They cannot then be a locus of any contrastive stress, which is required for an element to be in contrast with another element. Clitics can therefore never be in contrast with another element. For this purpose, full pronominal forms are used, as illustrated in (36).

(36)a. Mi smo doveli njega, a vi ste nju.

we are brought him-acc and we are her-acc

‘We brought him and you brought her.’

b. Mi smo predstavili njega njoj, a vi ste nju njima.

we are introduced him-acc her-dat and you are her-acc them-dat

‘We introduced him to her, and you did her to them.’

So, one may suggest that the degradation of sentences in (29) might then be due to the fact that the surviving clitics cannot be in contrast with corresponding elements in the

antecedent, which is required for pseudogapping. However, this cannot be the whole story, since sentences with both clitics surviving where the negated form of an auxiliary is used are perfect, as illustrated in (30). Note also that sentences such as (29) with two pronominal clitics surviving are worse than sentences with only one pronominal clitic surviving, as the one in (20). I would like to suggest that the contrast between sentences in (29) and (30), and the contrast between sentences in (29) and (20) is indeed due to the lack of a felicitous contrast between the two conjuncts. The contrast, however, is not of the kind necessary for pseudogapping, but rather it is more of the kind necessary for pure VP ellipsis, where the whole VP is elided with no remnants left behind. Note that in VP ellipsis the elements in contrast can be either the subjects, or both the subjects and auxiliaries, as the following examples from English and SC show:

(37)a. Tom bought a car, and Peter did, too.

b. Tom bought a car, but Peter didn't.

(38)a. Ivan je kupio auto, a i Petar je.

Ivan is bought car, and too Peter is

'Ivan bought a car, and Peter did, too.'

b. Ivan je kupio auto, a Peter nije.

Ivan is bought car, but Peter isn't

'Ivan bought a car, but Peter didn't.'

Note in passing, that in pseudogapping, it is not enough to have both subjects and auxiliaries in contrast, but not the objects, as shown in (39):¹²

¹² At least in SC, the sentence becomes better if another conjunct is added whose object is in contrast with the object in the second conjunct, as illustrated in (i):

(39)a. *Tom bought a car, and Peter didn't a car.

b. *Ivan je kupio auto, a Petar nije auto.

Ivan is bought car, and Petar isn't a car

Clearly, the pseudogapping remnant can survive VP ellipsis only if it is in contrast with the object in the antecedent clause, and no other contrast in the sentence helps.

Now, as far as the contrast between (29) and (30) is concerned, one difference between (29) and (30) is that in (30), a negated (non-clitic) form of the auxiliary is used, unlike in (29), where only the clitic form is used. Using a negated form of the auxiliary in the second conjunct of (30) makes the contrast between the two conjuncts much more felicitous. The same result is obtained in (40), where a full form of the auxiliary is used.

(40)a. Ja mu ga nisam predstavila, a ti mu ga jesi.

I him-dat him-acc am-not introduced, but you him-dat him-acc are

'I didn't introduce him to him, but you did.'

Full forms of auxiliaries are used only in cases where contrast is necessary. In fact, using only the clitic form in (40) is not good at all, since no felicitous contrast can be established:

(41)a. *Ja mu ga nisam predstavila, a ti si mu ga.

I him-dat. him-acc. didn't introduce, and you are him-dat. him-acc.

Now, with respect to these contrasting possibilities, SC examples with surviving pronominal clitics behave more like VP ellipsis than pseudogapping. In case one pronominal clitic survives, it is enough to have only subjects in contrast, as (20) shows.

-
- (i) Ivan je kupio auto, a Petar nije auto, već jahtu.
 Ivan is bought car, and Petar didn't car but yacht
 'Ivan bought a car, and Petar didn't a car, but a yacht.'

In case both pronominal clitics survive, the auxiliary needs to be in contrast too, but this is still what VP ellipsis allows, as illustrated in (38), unlike pseudogapping. The question is why these examples in SC behave more like examples of pure VP ellipsis with respect to contrasting possibilities among conjunct, although they look like examples of pseudogapping, since they involve remnants originating in a VP which is eventually elided. The answer may lie in the fact that clitics are phonologically weak elements, devoid of any stress, therefore, they are deaccented. Now, if VP ellipsis involves deaccenting at PF, as Chomsky (1993), Lasnik (1995c, 1997), Tancredi (1992) argue it is, it is possible that clitics are deaccented enough to make these sentences pass as VP ellipsis, with a small toll paid in the sense that sentences with surviving clitics require a stronger contrast between the conjuncts, which is obtained if the auxiliaries are in contrast too, and not only subjects.

Recall that I have claimed that SC (20), with only one pronominal clitic surviving ellipsis is a bit worse than (19), where both pronominal clitics are deleted. Now we can see why. While (19) is an example of pure VP ellipsis, where the subject and the element in Infl are spared, in (20) an element originating within the VP which is eventually elided survives VP ellipsis. In (20), it is enough to have contrast on the subjects, which is a minimum contrast required for VP ellipsis. In (21), however, with a clitic surviving VP ellipsis, the contrast between conjuncts is more felicitous if the remnant auxiliary is in contrast with corresponding element in the antecedent conjunct:

(42) Ja sam mu ga predstavila, a ti mu nisi.

I am him-dat. him-acc. introduced, and you him-dat. aren't

I introduced him to him, but you didn't.

Recall also that examples such as (20) with only one pronominal clitic surviving are better than examples in (29) with both pronominal clitics surviving. Apparently, the more clitics survive VP ellipsis, the harder it is for such examples to pass as VP ellipsis with the contrast between the conjuncts falling only on the subjects.

Given these facts, I will conclude that examples in (19-20) cannot involve empty VP base-generation, but are instances of VP ellipsis. As such, they present a problem for syntactic accounts to second position cliticization.

In the preceding sections I have argued that SC has examples of VP ellipsis much like those found in English. However, it would be interesting to note that SC not only has examples of VP ellipsis much like those found in English, but due to the possibility of overt verb raising, SC also allows the kind of VP ellipsis found in Irish (McCloskey 1991), Hebrew (Doron 1990), or Portuguese (Martins 1994), where VP is elided after the finite verb raises out of it.

2.4.3. *V Raising and VP Ellipsis*

Consider the following examples:

(43) Marko ne piše rad pažljivo, a Marija piše rad—pažljivo.

Marko not writes paper carefully, but Marija writes paper carefully

‘Marko isn’t writing the paper carefully, but Marija is.’

In the second conjunct of (43), the direct object and the adverb are missing. The second conjunct is still interpreted as Marija isn’t writing the paper carefully. Interestingly, this construction shows the same properties as VP ellipsis constructions in English and SC

discussed above. So, it allows both sloppy and strict readings of the elided pronouns, as illustrated in (44).

- (44) Petar ne gradi svoju kuću, ali Marija gradi.
 Petar not builds his house, but Marija builds
 ‘Petar is not building his house, but Mary is.’

(44) could be understood either as Marija is building the same house that Peter is not (strict reading), or as Peter is not building his own house, and Marija is building her own house (sloppy reading).

Also, what is elided is the material that typically occurs within VP, apart from the verb. In (43), what is elided is the direct object and a VP adverb. In (45), it is two VP adverbs that are elided.

- (45) Petar ne ide večeras kod Marije, ali Ivan ide.
 Petar not goes tonight to Marija, but Ivan goes
 ‘Petar isn’t going to Marija tonight, but Ivan is.’

So, in these constructions what is elided is everything that typically occurs within VP, except the verb itself. If the verb can raise out of VP overtly, however, then we can explain why the verb can escape VP ellipsis. In these constructions, then, after the verb raises out of VP, VP is elided. McCloskey (1991) argues that this kind of VP ellipsis exists in Irish, Doron (1990) argues that it exists in Hebrew, and Martins (1994) argues that it occurs in Portuguese.

Note also that the finite forms in the antecedent and the target conjunct need not be identical:

(46) Petar više ne piše radove nepažljivo, iako u prošlosti pisa.

I no more not write papers carelessly, although in past write_{impf.}

‘I don’t write papers carelessly any longer, although in the past I did.’

In (46), the antecedent form is a finite present tense form, while the verbal form in the conjunct which undergoes ellipsis is a finite imperfective form.

There is evidence which corroborates the assumption here that finite verbs can raise out of VP in SC.

2.4.3.1. Verb Raising in SC

Consider the examples in (47).

(47)a. Marko mudro savjetuje Mariju.

Marko wisely advises Marija

‘Marko is advising Marija in a wise manner.’

‘It is wise of Marko that he is advising Marija.’

b. Marko savjetuje mudro Mariju.

Marko advises wisely Marija

‘Marko is advising Marija in a wise manner.’

In (47a) the verb *savjetuje* ‘advises’ in the present tense form follows the adverb *mudro* ‘wisely’. The sentence is ambiguous. The ambiguity arises from the possibility of interpreting the adverb as either a subject-oriented or a manner adverb. On the former reading, *mudro* is a sentential adverb. On the latter reading, it is a VP adverb. In (47b),

the verb *savjetovati* precedes the adverb *mudro*. The sentence is not ambiguous. The adverb *mudro* can only be interpreted as a VP (manner) adverb in this case. The fact that in contrast to (47a), in (47b) *mudro* can only have a manner reading indicates that finite verbs in SC can move across VP adverbs, but not across sentential adverbs. Bošković (1995a, 1995b, 1997) and Watanabe (1993) argue that sentential adverbs are adjoined to TP. Then, in sentences such as (47b), SC finite verbs move overtly out of VP, but they do not cross TP. I will conclude that they can move overtly to T.

Note, however, that SC finite verbs need not move out of VP overtly.

(48)a. Petar voli ludo Mariju.

Peter loves madly Marija

‘Peter loves Mary madly.’

b. Petar ludo voli Mariju.

Petar madly loves Marija

‘Peter loves Mary madly.’

In (48a), the verb *voli* precedes the VP adverb *ludo*. Given the discussion above, the verb has moved out of its VP overtly. In (48b), however, the verb follows the VP adverb, which means that it has not moved out of its VP. Given these facts, at this point, I will conclude that either overt verb raising in SC is optional, or that the adverb can have more than one attachment site (in chapter 3, I will argue that the latter option is right).

Having established that SC finite verbs can raise overtly, then it is safe to claim that examples in (43) involve VP ellipsis after verb raises out of its VP. Interestingly, Bošković shows that even non-finite verbs raise out of its VP overtly in SC. As far as participles are concerned, Bošković (1995a, to appear a, forthcoming) shows that

participle raising is possible at SS, since they can precede VP adverbs, which means that they move out of the VP:

- (49) Jovan je zaboravio potpuno Petra.
 Jovan is forgotten completely Petar
 'Jovan forgot Peter completely.'

The same test can be used to check whether infinitives undergo overt raising:

- (50) Jovan će zaboraviti potpuno Petra.
 Jovan will forget completely Petar
 'Jovan will forget Peter completely.'

(50) illustrates that the infinitive *zaboraviti* can move over a VP adverb just like the participle. The infinitive thus may raise at SS.

Bošković (1995a, to appear a, forthcoming) argues that participles raise out of their VP to adjoin to Aux to check a feature that they share with the auxiliary verb. So, in (51) both examples involve the adjunction of the participle to Aux.

- (51) a. Vidjela je Ivana
 seen is Ivan
 'She saw Ivan.'
- b. Marija je vidjela Ivana
 Marija is seen Ivan
 'Marija saw Ivan.'

Examples such as (51a), in which the participle precedes the auxiliary, have been considered in the literature to be instances of Long Head Movement where the participle, which is a head, skips the auxiliary, also a head, on its way to Comp. Bošković (1995a, to

appear a, forthcoming), however, shows that although it is true that participles raise (as shown in (49)), they do not raise as high as Comp. They cannot precede the particle *li*, which means that they cannot be in C, as illustrated in (52a). In fact they do not raise over the sentential adverbs, hence not over TP, as illustrated in (52b).

(52) a. * Poljubila li je Marka.

kissed li is Marko

'Did she kiss Marko?'

b. * Marija je vidjela_i vjerovatno t_i Jovana

Marija is seen probably Jovan

'Marija probably saw Jovan.'

Given these facts and facts about the word order in multi-participle constructions such as past perfect tense, Bošković (1995a, to appear a, forthcoming) argues that participles must obligatorily adjoin to Aux overtly. This happens even in (51b), where the participle linearly follows the auxiliary. Bošković (1995a, to appear a, forthcoming) argues that after the participle adjoins to Aux, all of its features have been checked, so the participle cannot move further. The auxiliary, however, still has features to check (Tense, Agr) which can be either strong or weak. Based on Watanabe's (1993) Economy account of excorporation, where excorporation is allowed under well-defined conditions to satisfy Economy, Bošković argues that the auxiliary excorporates and moves higher to the functional heads to check features. The participle cannot move because the principles of Economy require that all movement be driven by feature checking in the most economical way, in particular that movement carry as little material as possible. In the configuration illustrated in (53), where Z is adjoined to Y, and where Y, but not Z, has a

feature to check against X, the most economical derivation is if only Y moves since only Y has features to be checked. Z does not move, since it has no further features to be checked.

$$(53) \quad X [Y + Z]$$

$$\quad \quad \begin{array}{c} \boxed{} \\ +F \quad +F \end{array}$$

So, the structure of the examples in (51) is given in (54)¹³.

$$(54) \quad \text{a. } [CP [IP [AuxP Vidjela_i + je [t_i Ivana]]]]$$

seen is Ivan

‘She saw Ivan.’

$$\text{b. } \text{Marija } je_j [AuxP vidjela_i + t_j [t_i Ivana]]$$

Marija is seen Ivan

‘Marija saw Ivan.’

The infinitives behave in the same way as participles with respect to the target of their movement. As illustrated in (50) above, the infinitive can precede the VP adverb *potpuno* ‘completely’, which means that it can move out of the VP. In (55), the sentential reading of the adverb *vjerovatno* ‘probably’ is not available.

$$(55) \quad * \text{Marija } \acute{c}e \text{ vidjeti vjerovatno Milana.}$$

Marija will see probably Milan

‘Marija will probably see Milan.’

¹³ Note that the structures in (54) imply that the feature that drives the movement of the auxiliary can be either strong or weak in SC. If it is strong, it will be checked overtly, as in (54b). If it is weak, it will be checked covertly, as in (54a). Bošković (forthcoming), however, has a different take on these constructions. Given his theory of copy deletion at PF which will be somewhat outlined below in this chapter and more in chapter 3, Bošković (forthcoming) allows for overt movement of the auxiliary to happen in both (54a) and (54b). The difference between (54a) and (54b), according to Bošković (forthcoming), then lies in the fact that in (54a), it is a lower copy of the auxiliary that is pronounced, while in (54b), it is the highest copy of

This means that the infinitive does not move further than TP. (56) shows that the infinitive can also precede the auxiliary verb.

- (56) Vidjeće¹⁴ Milana.
 see_{fut.3sg} Milan
 'She will see Milan.'

Given the discussion of the corresponding sentence with the participle, we may conclude that the infinitive is adjoined to Aux.

Having established that non-finite verbs move overtly out of its VP, one would predict a possibility of sentences where the participle or infinitive raises out of its VP and then the VP is elided. Such sentences are indeed possible in SC, as illustrated in (57):

- (57) Zoran je predstavio Milana Petru, a Ivan nije predstavio.
 Zoran is introduced Milan Peter, and Ivan isn't introduced
 'Zoran introduced Milan to Peter, and Ivan didn't.'

In the second conjunct of (57), the direct object and the indirect object are missing. The participle remains together with the auxiliary. The second conjunct is still interpreted as Ivan didn't introduce Milan to Petar. It can be shown that this construction shows the same properties as VP ellipsis constructions in English and SC discussed above. So, it allows both sloppy and strict readings of the elided pronouns, as illustrated in (58).

- (58) Petar je predstavio svog prijatelja Milanu, a Ivan nije predstavio.
 Petar is introduced his friend to-Milan, and Ivan isn't introduced
 'Petar introduced his friend to Milan, and Ivan didn't.'

the auxiliary that is pronounced at PF.

¹⁴There is a phonological process of the elision of the suffix *ti* when the clitic form *œ* follows the

(58) could be understood either as Petar introduced his friend to Milan, but Ivan didn't introduce the same guy to Milan (strict reading), or as Peter introduced his friend to Milan, and Ivan introduced his friend to Milan (sloppy reading).

Also, what is elided is the material that typically occurs within VP, apart from the verb which raises out of its VP. In (57), what is elided is a direct object and an indirect object. In (59), it is a direct object, indirect object, and two VP adverbs that are elided.

(59) Petar je predstavio Mariji Zorana juče u biblioteci, a Milan nije predstavio.
 Petar is introduced to-Marija Zoran yesterday in library and Milan isn't
 predstavio.

introduced

'Petar introduced Zoran to Marija yesterday in the library, and Milan didn't introduce.'

Although in the second conjunct, the indirect and direct objects, as well as two adverbs are missing, the second conjunct is still interpreted as Milan didn't introduce Zoran to Marija yesterday in the library.

Next, the missing material requires a linguistic antecedent, rather than pragmatically supplied antecedent, as illustrated in (25).

(60) [Zoran sees that Petar has just introduced Marija to Ivan, and says to Marko]:

a. * Pogledaj, Petar je predstavio ~~Mariji Ivana~~.

Look Petar is introduced to-Marija Ivan

b. Petar je predstavio Mariji Ivana, a Saša nije predstavio ~~Mariji Ivana~~

Petar introduced Ivan to Marija, and Saša didn't.

infinitive.

(60a) is ungrammatical although it is clear from the provided context that what Peter wants to say is that Ivan Petar introduced Ivan to Marija. On the other hand, (60b) in which the ‘missing’ material is recovered from a linguistic context is grammatical. The relevant process in SC then has the same discourse function as VP ellipsis. Given all of these data, I will conclude that the constructions where the non-finite verbs raise out of its VP with the rest of material normally occurring within a VP missing is a result of elision by VP ellipsis. VP ellipsis can thus occur in a variety of constructions in SC, and it is certainly safe to claim that it occurs in the constructions in (19-20).

To sum up, in the preceding sections I have shown that split clitic climbing constructions as well as the behavior of clitics in VP ellipsis constructions argue against syntactic accounts of second position cliticization. As far as VP ellipsis constructions are concerned, it has been suggested in the literature, that they actually do not involve VP ellipsis but empty VP base-generation. I have presented evidence, however, that this is not true. Furthermore, I have also presented evidence showing that SC has a more extensive range of constructions in which VP ellipsis occurs than English, due to the possibility of finite and non-finite overt verb raising in SC.

By exploring the split clitic climbing constructions and the behavior of clitics in VP ellipsis constructions, we have observed the following facts so far:

- (61)a. clause-mate clitics need not move to a position high in the tree leaving room only for one clitic to precede it. b. Clause-mate clitics need not cluster together in syntax, they can occur in different maximal projections.
- c. Clitics are in positions higher than VP since they can evade VP ellipsis.

d. The linear order of clitics matches their structural hierarchical order.

As far as (61a-c) are concerned, one question was left open – what are the positions to which clitics move? VP ellipsis data have shown us that each clitic is in a distinct maximal projection. Furthermore, pronominal clitics are low enough in the tree to be affected by VP ellipsis, while auxiliary clitics survive VP ellipsis. As far as auxiliary clitics are concerned, there is evidence that they move higher than TP. Consider (62).

(62) a. Oni su nesumnjivo bili ovdje.

they are undoubtedly been here.

‘They have undoubtedly been here.’

b. Oni će nesumnjivo doći.

they will undoubtedly come

‘They will undoubtedly come.’

If we follow Bošković (1995a, to appear a, forthcoming) who follows Watanabe (1993) in considering sentential adverbs to be placed between AgrS and Tense, or rather, adjoined to TP, then the auxiliary clitics in (62) precede TP, i.e., they are in AgrS. Being in AgrS, they are too high to be affected by VP ellipsis. As far as pronominal clitics are concerned, it was shown that they can survive VP ellipsis, one of them can be elided, or both of them can be elided, or none of them need to be elided. Pronominal clitics, therefore, must be in functional projections which are low enough in the tree to be affected by VP ellipsis, but also high enough in the tree, so that they can escape VP ellipsis. Furthermore, they need to be in separate maximal projections, since, as we have seen, this is the only way they could be ‘peeled off’ one by one by VP ellipsis. Given

this, I will suggest that projections that which satisfy these conditions are AgrOPs, which are on top of VP (or VP shells). The dative clitic is in AgrIOP, while the accusative clitic is in AgrDOP. Both VP ellipsis and clitic climbing data have shown that the dative clitic ends up in a structurally higher position than the accusative clitic. This means that AgrIOP is higher than AgrDOP in SC. As it will be shown in Chapter 3, movement of pronominal clitics to AgrOP projections is not an exclusive property of clitics. All other arguments in SC also move out of VP to functional projections in overt syntax.

So, I assume that VP ellipsis must be able to affect higher projections than VP, i.e. AgrOPs. If VP ellipsis affects AgrIOP and everything that it contains, then we get the data in (19), where no pronominal clitic survives. If it affects AgrDOP and everything it contains, then we get the data in (20), where the dative clitic survives, and accusative clitic is deleted. If it affects only VP, then, in principle, both clitics are able to survive, but due to other reasons discussed above, some such sentences may be perceived as somewhat degraded, as in (29).

As far as (61d) is concerned, it suggests that the order of clitics within the cluster is determined syntactically.

2.5. Order of Clitics

One of the consequences of the data discussed so far involving clitics in VP ellipsis and split clitic climbing constructions is that it suggests that a large portion of ordering of clitics among themselves is determined in overt syntax. Structural height of

clitics in overt syntax matches their linear surface order. VP ellipsis data have shown that auxiliary clitics are in a structurally higher position than pronominal clitics, and they also precede the pronominal clitics. As far as pronominal clitics are concerned, both clitic climbing and VP ellipsis data have shown that the dative clitic ends up in a position higher than the accusative clitic in overt syntax, and it also precedes the accusative clitic. So, the data discussed so far suggest that the order of clitics is determined already in syntax, and is not a consequence of some kind of a morphological template, which is a linearly ordered set of optional slots in which morphemes bearing certain feature specifications are placed. If it were true that the ordering of clitics is achieved through a morphological template, then one would regard this parallelism between the syntactic structure and the order of clitics to be accidental and arbitrary.

Templatic analyses of clitic ordering have often been assumed for SC (Halpern 1995, Schütze 1994). The major arguments for such analyses concerns instances of idiosyncracies in clitic ordering, or in other words, cases where there seem to be mismatches in the order of clitics of the same type, some of them occupying one position, while the others occupying another position in linear order. The major argument in this respect has been the behavior of the third person auxiliary clitic *je*. Recall that *je* ‘is’, the third person singular form of the auxiliary *biti* ‘be’, is the only auxiliary form that follows pronominal clitics, as illustrated in (63).

- (63) On *mi* *ga* *je* dao.
 he me-DAT it-ACC is given
 ‘He gave it to me.’

All other auxiliaries precede the pronominal clitics, as illustrated above.

Interestingly, although on the surface *je* follows the pronominal clitics, unlike other auxiliary clitics, in VP ellipsis *je* behaves in the same way as all other auxiliary clitics. Consider (64a-b).

(64)a. ? On *mi* *ga* *je* predstavio, a i ona *je* (takodje).

he me-DAT him-ACC is introduced , and too she is as well

‘He introduced him to me, and she did, too.’

b. * On *mi* *ga* *je* predstavio, a i ona *mi* *ga* , (takodje)

he me-dat him-acc is introduced, and she me-dat him-acc (too)

‘He introduced him to me, and she did too.’

The examples in (64) contain two conjoined clauses. In the second conjunct, VP ellipsis occurs. In (64a), the dative and the accusative clitics are elided together with the participle. The auxiliary *je*, however, remains. The sentence is good. In (64b), the auxiliary *je* is deleted, and the pronominal clitics remain. The sentence is bad. The contrast between (64a) and (64b) shows that apparently, although on the surface *je* follows pronominal clitics, with respect to VP ellipsis this auxiliary form behaves in the same way as other auxiliary forms in that it precedes pronominal clitics. As a result, pronominal clitics can be affected by VP ellipsis with *je* remaining unelided.

This state of affairs can be accounted for if one assumes that in overt syntax, *je* occupies the same syntactic position as other auxiliary forms, preceding pronominal clitics. So, crucially, at the point when ellipsis takes place, *je* precedes pronominal clitics, like other auxiliary forms, which makes it possible to elide pronominal clitics under VP ellipsis with *je* remaining unelided. In this way, *je* does not disrupt the general pattern of behavior of clitics in VP ellipsis. But then, the question is how *je* gets to follow all other

clitics when they are present. This is where templatic analyses might come into play saying that such a position of *je* in the linear order is a result of a morphological template. In Stjepanović (1998a), however, I suggest a different possibility. Given overwhelming evidence that most of the clitic ordering can be handled in syntax, I take it that no morphological template is necessary for establishing order of clitics. As far as the auxiliary clitic *je* is concerned, which displays a different behavior in syntax and phonology with respect to its position relative to pronominal clitics, I suggest that *je* is moved to its surface position from its syntactic position by a low-level morpho-phonological (PF) rule, which follows VP ellipsis. Bošković (forthcoming), however, shows that no such PF reordering mechanism is necessary to account for the dual behavior of *je*. Crucial to Bošković's account of the dual behavior of *je* is Chomsky's (1993) copy theory of movement and the possibilities it opens up for the PF realization of non-trivial chains. In particular, Bošković (forthcoming) adopts a proposal put forth by Franks (1998), that, just as Chomsky (1993) argues is a case for LF, in PF too, the deletion of a copy on the tail of the chain is only a preference. In other words, pronouncing a copy in the head of the chain is not the only option. More precisely, Franks (1998) argues that the head of the chain will be pronounced with all other copies deleted, if this would not lead to a PF violation. If the violation can be avoided by pronouncing a lower member of the chain, then the lower member of the chain will be pronounced with the head of the chain deleted. Bošković (forthcoming) argues that this is exactly what is responsible for the dual behavior of *je*. As various tests have shown, *je* in syntax occupies the same position as all other auxiliaries do, i.e., it precedes all the pronominal clitics. In phonology, however, the order of *je* and the pronominal clitics is

switched. Bošković argues that this switch is due to the fact that a lower copy of *je* is pronounced, since the pronunciation of the head of the chain is forbidden by phonology. Bošković attributes this to the fact that, as discussed by Browne (1975), Schütze (1994) and Tomić (1996), *je* is in the process of losing its cliticness. As such, and in the light of Bošković's analysis of clitic placement discussed below, it needs to be placed at the edge of the cluster. The edge of the cluster can mean either the initial position or the final position. *Je* cannot always be found in the initial position, however, since it follows the interrogative clitic *li*. This leaves only the final position of the cluster. And, as argued by Bošković, this is achieved by pronouncing a lower copy of *je* and deleting the head of its chain. No PF reordering mechanism is then necessary to account for the dual behavior of *je*.

So, since the behavior of *je*, which was the strongest argument for a templatic account of clitic order within a cluster can be explained in a principled way, there is no need for positing an arbitrary morphological template in order to account for the clitic order within the cluster in SC. VP ellipsis and split clitic climbing data show that for the most part linear order of clitics is already determined in syntax, except that in some cases (such as *je*) this order can be overridden by postsyntactic requirements.

So far, I have discussed auxiliary-dative-accusative ordering of clitics. By using the VP ellipsis and clitic climbing tests discussed here, Franks (1998) shows, however, that the ordering of other less often used clitic combinations is also determined in syntax. For example, the split clitic climbing constructions show that the genitive clitics are higher than accusative clitics, as in (65) from Franks (1998):

- (65)a. Ti si želio da me ih lišiš.
 you are wanted that me-acc them-gen deprive
 ‘You wanted to deprive me of them.’
- b. ?Ti si me želio da ih lišiš.
 you are me-acc wanted that them-gen. deprive
 ‘You wanted to deprive me of them.’
- c. *Ti si ih želio da me lišiš.
 you are them-gen. wanted that me-acc. deprive

The contrast between (65b) and (65c) shows that the accusative clitic is higher than the genitive clitic, since if only one clitic is found in the higher clause, it is the accusative one, and not the genitive one. On the ordering of the reflexive clitic *se*, which exhibits a similar behavior as *je*, and ethical dative clitics, see Bošković (forthcoming).

2.6. How Do Clitics Get into the Second Position?

In the preceding sections, we have seen that SC clitics are found in distinct maximal projections in overt syntax, but no element can intervene between them, i.e. they appear to be in a cluster (see the ungrammaticality of (2c)). Given this, if one wanted to claim that syntax is still responsible for preventing elements to intervene between clitics, the only way to get this would be to stipulate that no element can intervene between clitics, because they are clitics. But this is clearly not explanatory. What is special about SC clitics is that they are phonologically weak elements. They are not independent words phonologically, and have to lean on the element to their left, i.e. they are enclitics. This is

clearly phonological information. Furthermore, as shown by Bošković (1995a, to appear, forthcoming), SC clitics have to be attached to a host which is right-adjacent to an intonational phrase boundary. This is also clearly a phonological requirement. Given this, whenever the intervention of elements between clitics makes the sentence bad, it means that the requirement on SC clitics to be right adjacent to an intonational boundary is not satisfied. This is a clearly a phonological effect, and if one still wanted to make syntax responsible for preventing elements from intervening between clitics, one would surely have to make syntax look ahead to the needs of phonology.

In fact, as mentioned above, in some of the strong syntax accounts (Progovac 1996, Wilder and Čavar 1994 a,b, Rivero 1994), it has been suggested that syntax is allowed to look ahead to the needs of phonology, and to consider some phonological information, in this case, the enclitic status of SC clitics. Such look-ahead, however, introduces a considerable amount of globality into the system. However, in a derivational system (assumed by all syntax accounts to the second position effect), it is preferable to achieve the desired result without a look-ahead, in this case without syntax looking ahead to the needs of phonology. In the same vein, it would not help assuming that certain properties of language (for example, Last Resort) operate globally, since Collins (1997), Chomsky (1995, 1998), Bošković (to appear b) have argued that, apart from being conceptually problematic, assuming that economy constraints such as Last Resort operate globally is also empirically very problematic. One way out of the problem is to assume that placing clitics into the second position and yielding a clustering result is not a job of syntax, but phonology. In fact, this is what Radanović-Kocić (1988, 1996) and Bošković (1995a, to appear a, forthcoming) assume.

In Radanović-Kocić's system, clitics are placed in the second position by movement taking place in phonology, after they have been identified as clitics through an assignment of the feature [+clitic] via a rule, and after prosodic mapping has applied. Clitics and the corresponding full forms are derived from the same elements. The following two rules are responsible for clitic placement in her system:

(66)a. Assign the feature [+clitic] to the accusative, dative, and genitive pronouns, and auxiliaries (except *budem*) and the copula in all positions except when they are carrying phrasal stress and when not preceded by an element that can serve as its host.

(Radanović-Kocić 1988: 88)

b. Move all [+clitic] elements within an IP [intonation phrase] into the position after the first P [phonological phrase] of the same IP.

(Radanović-Kocić 1988: 134)

In the syntax itself, the clitics and the corresponding full forms are in the same position. This approach would fit the data presented above, but Progovac (1996) and Bošković (1995a, to appear a, forthcoming) present compelling evidence that it cannot be right. For example, Progovac (1996) observes that the possibility of clitic climbing out of the S-complements, as opposed to I-complements of SC verbs discussed above is problematic for Radanović-Kocić analysis:

(67)a. Milan želi da ga vidi. (S-complement)

Milan wants that him sees

'Milan wants to see him.'

b. Milan ga želi da vidi.

Milan him wants that sees

'Milan wants to see him.'

(68)a. Milan kaže da ga vidi. (I-complement)

Milan says that him sees

'Milan says that he sees him.'

b. *Milan ga kaže da vidi.

Milan him says that sees

'Milan says that he sees him.'

It is difficult to see how the contrast between (67b) and (68b) could be accounted under Radanović-Kocić's analysis. In (67b), the embedded clause forms a separate I-phrase, just like the embedded clause in (68b). Applying Radanović-Kocić's rules in (66), one would not expect to find a clitic in the matrix clause as it is in (67b). In fact, it is difficult to see how the difference between I-complements and S-complements in (67) and (68) could be accounted for in phonological terms. As Progovac (1996) shows, the difference with the two types of complements is syntactic and semantic. For example, as observed by Progovac (1995), negative polarity items extend their domain in S-complements, but not in I-complements, as illustrated in (69).

- (69)a. Ne želi da vidi nikoga. (S-complement)
 not wants that sees nobody
 ‘He doesn’t want to see anybody.’
- b. *Ne kaže da vidi nikoga. (I-complement)
 not says that sees nobody
 ‘He doesn’t say that he sees anybody.’

Furthermore, the difference is sensitive to typical syntactic operations, such as *wh*-movement over negation:

- (70)a. Koga ne želi da vidi? (S-complement)
 whom not wants that sees
 ‘Who doesn’t he want to see.’
- b. *Koga ne kaže da vidi. (I-complement)
 whom not says that sees
 ‘Who doesn’t he say that he sees?’

If the difference between I-complements and S-complements is semantic and syntactic, and if clitic placement is sensitive to it, as the contrast between (67)-(68) shows, then it follows that clitic climbing is a syntactic operation too, and not a phonological one.

Given that Radanović-Kocić’s analysis must be rejected, the only approach left is Bošković (1995a, to appear a, forthcoming) weak phonology approach, where he proposes that the second position effect is a result of a failure to satisfy lexical properties of clitics at PF.

Bošković (1995a, to appear a, forthcoming) notes that second position cannot mean the second position of the clause, but rather must mean the second position of the

clitics' intonational phrase.¹⁵ Bošković is led to such a conclusion by considering the following constructions from Zec and Inkelas (1990):

- (71) a. U Rio de Žaneiru ostali *su* dve godine
 in Rio de Janeiro stayed are two years
 'In Rio de Janeiro they stayed two years.'
- b. *U Riju ostali *su* dve godine
 in Rio stayed are two years
 'In Rio they stayed two years.'

In (71a) the clitic does not occur in the second position of its clause, but rather in the third position.¹⁶ The sentence is nonetheless acceptable. In (71b) the clitic is again in the third position of its clause, and the sentence is not acceptable. Following Zec and Inkelas (1990), Bošković (1995a, to appear a, forthcoming) argues that the relevant distinction between (71a) and (71b) is that in (71a) the preposed PP is heavy (under Inkelas and Zec's definition of "heaviness"), while in (71b) it is not. It is well-known that "heavy" constituents form separate intonational phrases. The preposed "heavy" PP in (71a) forms a separate intonational phrase, i.e., it is followed by an intonational phrase boundary.¹⁷ This is not the case with the "light" PP in (71b). The clitic in (71a) is, thus, correctly in

¹⁵Radanović-Kocić (1996) similarly proposes that clitics occupy the second position of their intonational phrase. As mentioned above, the main difference between her theory and Bošković's is that in her theory all clitic placement is accomplished by phonological operations, in particular, by applying Move in phonology. For empirical and conceptual inadequacies of such an approach, see Bošković (forthcoming) and the discussion above.

¹⁶ A number of other researchers have considered examples in which clitics are located in the third position of their clause; see Browne (1975), Čavar and Wilder (1994b), Schütze (1994), Progovac (1996), and Radanović-Kocić (1996), among others.

¹⁷ Note that the PP in (71a) is followed by a pause, an overt manifestation of the boundary. In fact, if the pause is not present, the sentence is bad.

the second position of *its* intonational phrase, while in (71b), it is not.¹⁸

To account for the descriptive generalization that SC clitics are located in the second position of their intonational phrase, Bošković (1995a, to appear a, forthcoming) proposes that the second position effect is a result of lexical properties of clitics which must be satisfied at PF. He proposes the following morphophonological requirements for second position clitics:

(72)a. #__ (where # is an intonational phrase boundary)

b. suffix

(72b) requires that SC second position clitics be suffixes, and (72a) requires that they be right adjacent to an intonational phrase boundary. The process of Merger in (73), which Bošković adopts in a modified form from Marantz (1989), ensures that there is no conflict between the two requirements in (72). Bošković assumes that for the constructions in question, Merger takes place in PF under PF adjacency.

(73) Merger

At any level of syntactic analysis, independent syntactic constituents X and Y standing in a relation at that level (or heading phrases standing in a relation) may merge into a single word, X+Y, projecting the relation between (the constituent headed by) X and (the constituent headed by) Y onto the affixation relation X+Y.

Departing from Marantz, Bošković (1995a, to appear a, forthcoming) crucially assumes that Morphological Merger cannot re-order elements; it simply puts two adjacent elements together, forming a word out of them.¹⁹

¹⁸ For a more detailed analysis, and discussion of questions such as how the theory forces all of the clitics in a clause to be at the left-hand edge of the same intonational phrase, see Bošković (forthcoming).

¹⁹ As such, Merger has a very different status from Prosodic Inversion, advocated by weak syntax

Thus, according to Bošković, SC clitics are suffixes and need to be suffixed onto something, but at the same time they have to be right-adjacent to an intonational phrase boundary. When they are merged with a phonologically strong element X, the merged complex can take over any requirement of its “constituents” (X or the clitics). So, in the structure in (74), all clitics merge to X, which, then, takes over all of their requirements, in this case their requirement to be right-adjacent to an intonational phrase.

(74) # X Cl Cl Cl

In Bošković’s account, thus, syntax “proposes” structures to phonology, and phonology filters out or “disposes” those which violate PF requirements. Given such a formulation of the second position effect, in overt syntax clitics need not always be in the same structural position high in the tree, and further they need not be adjoined to each other. Each clitic can be (but does not have to be) in a separate maximal projection. Sentences such as (4b), where elements intervene between the clitics, or sentences such as (71b), where the clitic is not adjacent to an intonational phrase boundary, are ruled out by the PF requirements in (72). In particular *ga* in (4b) and *su* in (71b) cannot satisfy (72a) since their host (the element they merge with) is not right adjacent to an intonational phrase boundary.

Recall, also, that in the case of clitic climbing, the clitic cluster can be split, as in (13b). The grammaticality of sentences such as (13b) is straightforwardly accounted for under Bošković’s account. In (13b), the dative clitic *mu* ‘him’ is in the second position of its intonational phrase, while the accusative clitic *ga* ‘him’ is in the second position of its

approaches. Prosodic Inversion crucially allows word re-ordering in PF. That is, if a clitic cluster ends up sentence-initial in overt syntax, re-ordering can occur in PF, which puts the cluster in the second position. The version of Merger Bošković adopts does not allow this kind of re-ordering.

intonational phrase, as illustrated in (75).

(75) # Marija *mu* želi # da *ga* predstavi.#

Marija *him_{dat}* wants that *him_{acc}* introduce

‘Marija wants to introduce him to him.’

Constructions such as (76) are still ruled out, although the clitics seem to satisfy the morphophonological requirements in (72).

(76) * #Svojoj najboljoj prijateljici *će* # dati *ga*

her best friend-DAT will give it-ACC

sutra.#

tomorrow

‘She will give it to her best friend tomorrow.’

As shown, both clitics are within the second position of their respective intonational phrases, thus satisfying the morpho-phonological requirements in (72). Bošković (forthcoming) shows, however, that this does not have any undesirable consequence. Sentences such as (76) are already ruled out under the relevant derivation in the syntax. Following standard assumptions concerning intonational phrases, Bošković argues that fronted heavy constituents, parentheticals and appositives form separate intonational phrases, the boundaries of which coincide with the boundaries of these syntactic constituents. In order to satisfy (73), the clitic must be located within the intonational phrase formed by the fronted NP, given the natural assumption that morphological Merger cannot take place across intonational phrase boundaries. Example (76) then must

involve movement of the auxiliary into the fronted NP, as illustrated in (77).

- (77) * #_{[NP} Svojoj najboljoj prijateljici cé] # dati ga sutra.#
 his best friend-dat will give it-acc tomorrow
 ‘She will give it to her best friend tomorrow.’

In the minimalist framework, however, this movement is syntactically illegitimate, since it does not have any driving force. Auxiliaries such as the one in (77) can have a reason to move to T or AgrS. There is, however, no requirement that could plausibly motivate movement of the auxiliary into the fronted NP. The movement of the auxiliary in (77) is thus syntactically superfluous. The sentence is therefore ruled out in syntax by the Last Resort Condition, which bans superfluous operations. So, the difference between the bad (77) and the good (13) is not that the good sentence satisfies the morphological requirements of clitics and the bad one does not. On the contrary, both sentences satisfy the morpho-phonological requirements of clitics. The difference lies in the fact that (13) is syntactically well formed, while (77) is not.

Bošković's weak phonology approach thus nicely accommodates the data presented in this chapter. It is also an approach with a theoretically best case scenario, in which syntax does not look ahead to the needs of phonology, and in which syntax feeds phonology.

An important result of Bošković's phonological approach to second position cliticization in SC is that it postulates no movement in PF. As mentioned above, the strong phonological account of Radanović-Kocić has to rely heavily on movement in PF. The weak syntax approach also has to rely on small amount of movement in PF, in the form of Prosodic Inversion, which is, as discussed above, formulated as a last resort

operation that affects clitics only if their prosodic requirements are not satisfied and moves them only the minimal distance necessary to satisfy the requirements. As such, this movement is phonologically well-motivated, i.e., the movement of clitics in PF is sensitive to phonological information, such as prosodic status of the target, targeting a prosodic word. Furthermore, the locality of this movement is more restricted than that of any syntactic movement, and is stated in phonological terms (Move after the first prosodic word). However, Bošković (forthcoming) shows that PI is not only empirically seriously flawed, but also that there is no need for introducing any kind of movement into PF to handle the placement of clitics into second position, since all the facts can be handled by exclusively phonological mechanisms in the way described above.

To sum up, in this chapter I have tried to shed more light on the debate concerning issues about the second position clitic placement in SC. I have considered the behavior of SC clitics with respect to clitic climbing and VP ellipsis. I have shown that in overt syntax, clitics do not need to be in a cluster, adjoined to each other or to the same node. Each clitic may be in a separate maximal projection in overt syntax. Furthermore, I have shown that clitics do not have to occur very high in the tree. These findings make syntactic approaches to the second position effect untenable, since these approaches all crucially rely on locating clitics in a cluster in a position which is very high structurally. The data presented in this chapter provide evidence for Bošković's (1995a, to appear a, forthcoming) account of second position cliticization, and as such they provide evidence for a derivational model of interface between syntax and phonology, in which syntax feeds phonology, without any look-ahead.

Furthermore, the fact that the second position clitic placement is due to PF requirements will be important in the light of the theory of free word order put forth in the next chapter.

Chapter 3

Free Word Order in Serbo-Croatian

3.1. Introduction

It is a well-known fact about Serbo-Croatian (SC) that it is characterized by a great freedom of word order. So, in a sentence with an intransitive verb, such as (1), both orders are possible. In a sentence with a subject, a transitive verb and a complement, as in (2) all six logically possible orders are attested in SC:

(1)a. Petar trči.

Peter runs

'Peter is running.'

b. Trči Petar.

runs Peter

(2)a. Petar čita knjigu.

Petar reads book

'Petar is reading a book.'

b. Petar knjigu čita.

Petar book reads

c. Knjigu Petar čita.

book Petar reads

d. Knjigu čita Petar.

book reads Petar

- e. Čita knjigu Petar.
reads book Petar
- f. Čita Petar knjigu.
reads Petar book

In the generative tradition, issues concerning free word order have attracted a lot of attention in languages such as Japanese (Harada 1972, Saito 1985, Saito 1992, Saito 1994, Fukui 1993, Saito and Fukui 1998, Bošković and Takahashi 1998, to name just a few), Hindi (Mahajan 1997), Warlpiri (Hale 1983), German (Diesing 1992, 1997, Jelinek and Diesing 1997), Dutch (Reinhart 1995, 1996, 1998, Neeleman and Reinhart to appear, van der Does and de Hoop 1998), Italian (Calabrese 1992, Zubizarretta 1998, Cardinalletti 1999), Spanish (Zubizarretta 1998). The process of derivation of free word order has descriptively been called scrambling. In the generative tradition, perhaps the most investigated language with respect to scrambling is Japanese. In the early generative tradition, scrambling has been viewed as a stylistic operation, applying postsyntactically (Ross 1967, Chomsky 1972). Saito and Hoji (1983) and Saito (1985) have, however, shown that scrambling in Japanese has syntactic effects, and since then scrambling in Japanese has been argued to be a product of syntactic component. More precisely, it has either been seen as an instance of overt movement (Saito 1986, Saito and Fukui 1998, among others), or base-generation and LF movement (Bošković and Takahashi 1998). Scrambling in other languages than Japanese does not always exhibit the same properties as scrambling in Japanese. So, scrambling in German and Dutch, for example, has been shown to be more restricted than scrambling in Japanese, in that it is clause bound, while

in Japanese it can be long-distance as well. Furthermore, Diesing (1992, 1997) and Jelinek and Diesing (1996) have made a claim with respect to scrambling in German, Egyptian Arabic and Yiddish that only certain kinds of DPs can be scrambled. In these languages, a specific noun phrase must scramble (except when the noun phrase bears special focus interpretation), while a non-specific one cannot. Given this observation, they propose an account in which scrambling in these languages is semantically driven, i.e., the relevant elements must scramble out of their VP by LF, so that certain semantic conditions are satisfied. Neeleman and Reinhart (to appear), on the other hand, have observed with respect to scrambling in Dutch/German that it is not tied so much to the question whether the object is specific or non-specific, but rather to prosodic properties, in particular to the PF considerations of main sentential stress, and information structure. The relationship between information structure, prosody and scrambling has also been observed in languages such as Italian (Calabrese 1982, 1992, Zubizarreta 1998, Cardinalletti 1998, among others), Spanish (Zubizarreta 1998), or Catalan (Valduvi 1992). In this chapter I will show that free word order possibilities in SC illustrated above are closely tied to the considerations of prosody and information structure. I will show that as a result, syntax cannot be solely responsible for the derivation of these word orders, but that PF plays a crucial role too.

3.2. Defocalized Phrase Scrambling in SC

SC has free word order, as illustrated in (1) and (2), but not every word order is felicitous in every context. One fact about SC is that the felicity of a sentence in a certain

context depends on the order of elements it contains, its information structure (articulation of a sentence into focus and presupposition) and prosodic properties, in particular considerations of main sentential stress. I will show that scrambling in SC is closely related either to the need to remove defocalized elements from the position where they would receive the main sentential stress, which would result in identifying them as focus, or to move elements required to be focused to the position where they can be identified as focus. The mechanisms necessary for achieving this cut across both syntax and PF.

Languages can mark focus in different ways: morphologically, positionally (by virtue of occupying a certain syntactic position) and prosodically (by virtue of stress). A language can use more than one of these means. There are also different kinds of focus. For now, I will make a distinction between new information focus and contrastive/emphatic focus, with more elaboration about what exactly they are in Chapter 4. New information focus is found in out-of-the-blue contexts (for example, in an answer to the question *What happened?* - *John saw Mary*, where the whole sentence is new information.), and also as the part of a sentence that answers a *wh*-question, (for example, *a book* is a new information focus in the sentence *John bought a book*, as an answer to the question *What did John buy?*). Contrastive/emphatic focus is associated with a negation (contrastive focus) or assertion (emphatic focus) of a presupposition (e.g. *MARY bought a book, not Peter*, or *Yes, JOHN did it.*).

As far as contrastive focus in SC is concerned, sentences containing it are best if it is identified in a preverbal position, as in (3).¹

¹ Throughout, contrastive (or identificational) focus will be bold-faced in the examples, while new information focus will be capitilized.

- (3)a. **Mariju je Petar zagrljo.**
 Marija is Petar hugged
 ‘Petar kissed Marija.’
- b. **Petar je Mariju zagrljo.**
 Petar is Marija hugged

This suggests that contrastive focus is licensed positionally in SC, i.e., by movement to a syntactic position. While I will argue that this is true, in both cases in (3a-b), the contrastively focused element also carries a heavy stress, which implies that it is also licensed prosodically.

The fact that one kind of focus can be licensed by multiple means is not uncommon cross-linguistically. So, for example, Kidwai (1998) notes that in Hindi-Urdu, contrastive focus can be realized either by a syntactic strategy of preverbal positioning, a morphological strategy of in situ focus via *-hi*-cliticization, and a prosodic strategy of heavy contrastive stress. Furthermore, neither of these strategies are in complementary distribution with each other, since all three may be used simultaneously in a single sentence as (4) from Kidwai (1998) shows.

- (4) kitab **Ram-hi** layega (sita nehi)
 book Ram-EMPH bring-FUT Sita not
 ‘RAM will bring the book, not Sita.’

In (4), the subject *Ram* is contrastively focussed, and this focus is identified through the immediately preverbal position in which the subject appears (the canonical word order in Hindi-Urdu is SOV), heavy contrastive stress, and the emphatic clitic *-hi*. In the SC

examples in (3), the contrastive focus on the elements is licensed both positionally and prosodically.

It should be pointed out, however, that sentences in which the contrastively focused element remains postverbal and receives a heavy stress as in (5) are not completely bad.

(5)a. ??*Petar je zagrlio Mariju.*

Petar is hugged Marija

‘*Petar hugged Marija.*’

However, sentences such as (3) with preverbal contrastive focus are much better than sentences such as (5). Given this contrast, I will conclude that contrastive focus in SC is licensed positionally by movement to a preverbal position, accompanied by heavy stress. A similar observation has been made with respect to Russian by King (1995) and Stepanov (1998). King (1995) and Stepanov (1998) observe that in Russian, just as in SC, sentences involving postverbal contrastive focus with heavy stress are not completely infelicitous, but that there is a contrast between sentences with a preverbal and postverbal contrastive focus. Based on this contrast, she concludes similarly that contrastive focus is licensed positionally in Russian.

As far as new information focus in SC is concerned, in those cases where the whole sentence is new information, focus is perceived as neutral if the word order of a sentence is a canonical one (for example in a transitive sentence, it is SVO), and the main stress of the sentence falls on the most embedded element of the sentence. In cases where part of a sentence is a new information focus (for example, as in an answer to the question *Ko je kupio knjigu?* ‘Who bought a book?’ – *Knjigu je kupio Petar.*, where

Petar is focussed), the focus is perceived as neutral if the focussed element follows the presupposed material in the sentence and the main stress of the sentence falls on it. So, since the focused element is always in the final position, on the face of it, one might suspect that this kind of focus in SC is also licensed positionally, in addition to being licensed prosodically by stress. However, I will show that this is only apparent, and that this kind of focus in SC is licensed only prosodically, by stress assigned by the Nuclear Stress Rule, in the sense of Chomsky and Halle (1968), Cinque (1993), Zubizarreta (1998), among others. I will sometimes call this kind of focus as neutral focus.

Apart from purely contrastive and new information focus, there are also cases which can be answers to *wh*-questions, but have properties close to contrastive focus. Such cases are found in sentences such as (6).

- (6)a. Šta je mačka uhvatila?
 what is cat caught
 ‘What did the cat catch?’
- b. Mačka je miša uhvatila.
 cat is mouse caught
 ‘The cat caught a mouse.’
- c. Miša je mačka uhvatila.
 mouse is cat caught
 ‘The cat caught a mouse.’

As shown, these sentences can serve as answers to a *wh*-question, but the part of the sentence which provides the information asked in the question is not in the final position, as with neutral new information focus. In (6), the focused element is found in a preverbal

and sentence initial position, and it bears a heavy emphatic stress with the elements following it pronounced with a very low pitch; so that they almost disappear in pronunciation. In the traditional functional sentence perspective literature, these sentences are known as emotive sentences (see King 1995 and Baylin 1995 for Russian, and references cited there). In the emotive sentences in (6), the focused element (*miša* ‘mouse’) does not only designate the new information, but it is as though the speaker emphasizes that it is a mouse and not something else that the cat caught, which is a property of contrastive focus. A related kind of sentences, which can fall under the rubric of emotive sentences, can be used in an out-of-the-blue context, where the whole sentence is a new information, as illustrated in (7).

- (7)a. Šta se desilo?
 what SE happened
 ‘What happened?’
- b. Mačka je **miša** uhvatila.
 cat is mouse caught
 ‘The cat caught a mouse.’
- c. **Miša** je mačka uhvatila.
 mouse is cat caught
 ‘The cat caught a mouse.’

In (7b-c), the whole sentence is a new information focus and can be used in an out-of-the-blue context, but the object is fronted and bears an additional stress. In this kind of sentences, unlike in the sentences in (6), the material that follows the fronted object is not destressed. The sentences in (7b-c) mean that what happened was that a cat caught a

mouse, but by fronting the object and stressing it, it is as though the speaker wants to emphasize that it is a mouse that was caught by a cat, and not something else. In Chapter 4, I will show that this kind of non-neutral focus is identificational focus in the sense of Kiss (1998), and is licensed positionally and prosodically.

The main focus of this chapter will be accounting for word orders representing neutral new information focus structures.

3.2.1. *Word order and Focus*

As mentioned above, in SC, in a sentence which are partitioned into a focussed and presupposed part, in most cases, the sentence is going to have a neutral focus reading if the constituent in focus is what on the surface looks like the final position, receiving the main stress of the sentence. So, for example, as far as the two sentences in (1) are concerned, if a full sentence is used as an answer, the most felicitous answer to the question *Ko trči?* ‘Who is running?’ is (1b), where the focussed subject follows the presupposed verb. On the other hand, a more felicitous answer to the question *Šta Petar radi?* ‘What is Peter doing?’ is (1a), where the focussed verb follows the presupposed subject. Under a neutral focus reading, (1a) is also a more felicitous answer to the question *Šta se dešava?* ‘What is happening?.’ In this case, the answer sentence is not partitioned into focus and presupposition, rather the whole IP is focus.

A similar thing holds for the examples in (2). If the context question requires the partitioning of the answer sentence into focus and presupposition, the best result is obtained if the focussed constituent follows the presupposed one. So, if the question is

Šta Petar čita?, ‘What is Peter reading?’, which requires the object in the answer sentence to be in focus, under neutral focus reading, the most felicitous answer is (2a), where the focussed object follows the presupposed material. On the other hand, if the question is *Šta Petar radi s knjigom?* ‘What is Peter doing with the book?’, which requires the verb in the answer sentence to be in focus, the most felicitous answers are (2c-d), where the focussed verb follows the presupposed part. If a context question, such as *Ko čita knjigu?* ‘Who is reading the book?’ requires the subject in the answer sentence to be focussed, the most felicitous answer is when the subject follows the presupposed material, as in (2d). Note that the word orders in (2e-f) are possible word orders in SC, but these cases cannot be neutral focus answers. These V-initial sequences are felicitous only if there is a heavy stress on V signaling emphasis or contrast, and can be used in contexts requiring the verb to be contrastively focused. Note, however, that these sequences become more felicitous with neutral intonation whenever there is an element preceding them, as in (8):

- (8)a. Ko danas čita knjigu?
 who today reads book
 ‘Who is reading a book today?’
- b. ?Danas čita knjigu Petar.
 today reads book book
 ‘Petar is reading a book today.’

I will come back to the reasons why this is so below, but for now I will first focus my attention on cases like (1)-(2d).

So, by looking at the examples in (1-2), the following generalization emerges:

- (9) In a SC sentence, under neutral focus reading, the focused constituent follows the presupposed one.

The focused constituent in the final position in these sentences receives the main stress of the sentence.

Furthermore, by comparing the examples in (2b) and (2c), which can both answer the same question *Šta Petar radi s knjigom?* ‘What is Peter doing with a book?’, we can conclude that the order of presupposed arguments in SC preceding the focussed constituent is free (at least for these cases). I will call this free word order possibility of presupposed phrases – defocalized phrase scrambling. Defocalized phrase scrambling in SC is clause bound. This can be deduced from the impossibility of the examples in (10b) and (11b) to serve as felicitous answers to the questions in (10a) and (11a).

- (10)a. Ko si tvrdio da voli Mariju?

who are claimed that loves Marija

‘Who did you claim that loved Marija?’

- b. * Mariju sam tvrdio da voli Petar.

Marija am claimed that loves Petar

‘I claimed that Petar loved Marija.’

- (11)a. Koga si tvrdio da Petar voli?

whom are claimed that Petar loves

‘Whom did you claim that Petar loved?’

b. * Petar sam tvrdio da voli Mariju.

Petar am claimed that loves Marija

'I claimed that Petar loved Marija.'

The questions in (10a) and (11a) require the subject and the object of the embedded clause respectively to be focussed. The rest of the answer sentence is presupposed. When the presupposed subject in (10b) and object in (11b) are scrambled to the matrix clause, the sentences are not good. Let me be a bit more precise by what I actually mean by the presupposed material. I assume that such elements are D-linked to an accessible discourse entry, in the sense of Neeleman and Reinhart (to appear). According to Neeleman and Reinhart, an element is accessible if it is either the topic or has been mentioned very recently. With Pesetsky (1987), they assume that the accessible entity need not be an antecedent in the sense of strict identity. A DP may be D-linked also if only its common noun set is already in the context set. The object in (10b) and the subject in (11b) are D-linked, since they have been mentioned in the context question.

At this point we are facing a number of questions with respect to SC facts in (2a-d): Why is under neutral focus reading, the focussed element in the final position receiving the main stress of the sentence, with the presupposed material preceding it? Why is this kind of focus perceived as neutral focus? Why is the order of the presupposed elements free? Why is the defocalized phrase scrambling clause-bound? How are these different orders derived in SC, i.e. how does the element in focus gets into the final position and how do the presupposed elements get to precede the focused element? Is the syntactic component solely responsible for giving these word orders with such information structure and prosodic properties?

Before I sketch an answer to these questions, let me first point out that there is evidence that in SC, the verb and all its arguments move out of VP to functional projections in overt syntax.

3.2.1.1. Verb and Argument Raising

As far as overt raising of verbs is concerned, the evidence was given in Chapter 2 that both finite and non-finite verbs raise out of their VP. As far as arguments of verbs are concerned, there is evidence that they can raise in overt syntax as well. For example, subjects can precede sentential adverbs, such as *nesumnjivo* ‘undoubtedly’, which are standardly taken to be generated pretty high in the tree, and definitely outside the VP domain (Jackendoff 1972, Watanabe 1993, Bošković 1997a, among others):

(12) Petar je nesumnjivo kupio auto.

Petar is undoubtedly bought car

‘Petar undoubtedly bought a car.’

As far as direct objects are concerned, Bošković (1997a) gives evidence that they undergo overt object shift. He shows that objects can raise out of their VP by using the example in (13).

(13)a. Jovan je namerno dva put oborio Petra.

Jovan is deliberately twice failed Petar

‘Jovan deliberately twice failed Petar.’

namerno > dvaput

- b. Jovan je oborio Petra namerno dva put.
 Jovan is failed Petar deliberately twice
 ‘Jovan failed Petar deliberately twice.’
 namerno > < dva put

Following Pesetsky (1989) who follows Andrews (1983), Bošković takes judgments concerning the relative scope of adverbs as evidence about the direction of adverb adjunction. The prime examples discussed by Andrews (1983) and Pesetsky (1989) in this respect are given in (14).

- (14)a. John [[[knocked on the door] intentionally] twice]
 twice > intentionally
- b. John [intentionally [twice [knocked on the door]]]
 intentionally > twice

In (14a) where adverbs are right adjoined, *twice* takes scope over *intentionally*. The sentence refers only to two instances of intentional knocking. In (14b), where the adverbs are left-adjoined, *intentionally* takes scope over *twice*. There was only one intention, which was to knock twice. The judgments concerning scope of adverb then tell us the direction of adverb adjunction. Bošković (1997a) argues that these judgments can be used as a probe for determining whether elements base-generated within VP have moved outside the VP. Considering the examples in (13), he comes to a conclusion that objects in SC can raise out of VP. (13a) is unambiguous, only the first adverb has scope over the second. In (13b), however, the scope of adverbs is ambiguous. Both the reading on which the first adverb has scope over the second, and the reading on which the second adverb has scope over the first one are available, according to Bošković (1997a). Given

this, Bošković (1997a) concludes that on the latter reading, both the participle and the object must have moved across the adverbs. As far as the position to which the object moves is concerned, Bošković shows that it is an A position. He considers the following example involving quantifier float:

- (15) Jovan je oborio studente sve.
 Jovan is failed students all
 ‘Jovan failed all students.’

Following Sportiche (1988), who proposes an analysis of quantifier float on which floating quantifiers are associated with traces of movement, and Deprez (1989), who shows that A-movement, but not A'-movement, can float quantifiers, Bošković (1997a) concludes that in (15), since the object *studente* floats a quantifier *sve* ‘all’, the object must have moved to an A position.²

Another piece of evidence for the possibility of their raising in overt syntax may come from binding. (16) shows that an object is capable of binding into a VP adverb.

- (16) Slikao je Gorana i Petra za vrijeme suđenja jednog drugom.
 photographed is Goran and Petar during trials one-gen another-dat
 ‘He photographed Goran and Petar during each other’s trials.’

² Bošković (1997) also gives the following example, which according to him, involves a parasitic gap to show that the object is located in an A-position. If this is a parasitic gap, and parasitic gaps are licensed from A' positions, as standardly assumed, since licensing fails here, the object must be moving to an A position.

- (i) * Jovan je oborio Petra, a da nije ni ispitao.
 Jovan is failed Petar without even examining
 ‘Jovan failed Petar without even examining him.’

However, it is no longer convinced that these constructions involve parasitic gaps (as Bošković p.c. contends himself), and that SC has parasitic gaps at all. Rather, a good example such as (ii), which he has taken to be an instance of a parasitic gap licensing in his 1997 book, may actually be an instance of across-the-board movement, which fails in (i).

- (ii) Petra je Jovan oborio, a da nije ni ispitao.
 Petar-acc is Jovan-nom failed, without even examining
 ‘Jovan failed Petar, without even examining him.’

Here the direct object *Gorana i Petra* ‘Goran and Petar-acc.’ binds the anaphor in the VP adverb. If adverbs are base-generated in a position higher than objects, and if Lasnik (1995/1999) is right that feature movement does not license binding relations, then the object must have moved overtly in (16). One proponent of the view that adverbs are base-generated in a position lower than objects is Larson (1988). In his VP shell analysis, Larson (1988) base-generates VP adverbs within VPs with sufficient structure to ensure that the objects are higher in the tree than the adverbs. However, there is evidence that argues against such a view.

There is some empirical evidence that argues against the view that adverbs are base-generated as complements of objects. First, let us consider the sentences in (17):

- (17)a. He had later completely destroyed his car.
 b. He had destroyed his car completely later.
 c. *He had completely later destroyed his car.
 d. *He had destroyed his car later completely.

The contrast between (17a) and (17c) show that if there is a time adverb and a manner adverb preceding the verb, the time adverb must precede the manner adverb. If they are adjoined to an XP (or in specifiers of an XP), and given the standard assumption that branches cannot cross each other, this means that when they precede the verb, the time adverb is higher in the structure than the manner adverb. When they follow the verb, however, the time adverb must follow the manner adverb, as could be deduced from the contrast between (17b) and (17d). Now, given Larson’s view of adverb placement, the same hierarchical order of adverbs as they precede the verb (i.e. time higher than manner)

cannot be preserved when they follow the verb. Under Larson's analysis, when they follow the verb, manner adverbs will be higher than time adverbs.³

Second, if adverbs are generated lower than objects, scope interactions of adverbs such as those discussed in (14) are predicted to be the opposite of what is expected. As mentioned above, Pesetsky (1989), following Andrews (1983), claims that in (14b), *twice* unambiguously has scope over *intentionally*. Given the standard assumption that scope is determined hierarchically, *twice* must c-command *intentionally*. However, under the hypothesis that adverbs are generated lower than objects, i.e., as complement of verbs, *intentionally* will be higher in the tree than *twice* and c-command it, which means that it should take scope over it. For additional evidence against Larson's analysis see Branigan (1992) and Bošković (1995b, 1997a).⁴

If adverbs are base-generated in a position higher than objects, then the sentence in (16) shows that at some point, objects in SC must raise out of their VP. Furthermore, Lasnik (1995a) argues contra Chomsky (1995) that formal features without the categorial and semantic features are not felicitous binders. Chomsky (1995) assumes that at LF movement affects only formal features. For Chomsky, these formal features moving at

³ There might be a way to get the right order of adverbs by basegenerating them lower than the object, and then performing a series of Kayne (1994)-style movements to the left, but then the question of what the driving force of these movements would be.

⁴ On the other hand, there is evidence suggesting that when they follow the verb and the object, the first adverb is higher than the second adverb, since the first adverb can bind the second one. These are Pesetsky's (1995) facts, illustrated in (i).

(i)a. John spoke to Mary about these people in each other's houses on Tuesday.

b. *Sue spoke to Mary about each other's flaws in these houses.

If adverbs are rightward adjoined to an XP here, these facts would not be predicted, since the first adverb would be lower than the second one, which is not the case if they are attached lower than the object, as complements of verbs. Scope of adverbs, however, behaves exactly opposite of binding in this respect. Since these binding facts do not hold in SC, but scope facts do, I will assume that in SC adverbs are in an adjoined position when they follow the verb. These facts might be questionable even in English, though, since they have the same status as sentences in (ii), noted by Lasnik and Saito (1991), where clearly no c-command relation obtains between the binder and the bindee.

(ii) ??The DA proved that Tom and Peter are guilty during each other's trials.

LF contain the referential content necessary to license binding, control, etc. Lasnik (1995c), however, has a more strict interpretation of formal features. For Lasnik, referential and quantificational properties, which are crucially involved in phenomena such as binding, control and scope are not properties of formal features undergoing movement at LF. Rather, they are determined by the movement of semantic features that stay behind. Adopting Lasnik's view, since in (16), binding between the object and the reciprocal in the adverb which starts out in a position higher than the object, obtains, one may conclude that the object has raised overtly to a position outside its VP. And since binding is obtained from A positions, then the position could be taken to be AgrP, where the object moves either for Case or EPP reasons (on the latter see Lasnik 1995c).

The Condition A data possibly show that a direct object can raise out of VP in SC. Now, if it were possible to show how these constructions behave with respect to the binding Condition C, it could be shown whether the raising of objects in SC is obligatory. The problem is that this cannot be checked so straightforwardly in SC due to an interfering factor. In SC, even non-c-commanding backwards coreference results in a bad result, as illustrated in (18).

(18) *Njegova_i djeca vole Ivana_i his_i kids love Ivan_i

'His kids love Ivan.'

If one were to test the behavior of the same type of constructions as in (16) with respect to Condition C, one would have to use examples such as (19).

(19) *Oni su otpustili njega_i zbog Petrovih_i izjava.

they are fired him because of Petar's statements

'They fired him because of Petar's statements.'

Although this example is bad, we cannot conclude here that the pronoun c-commands an R-expression in the VP adverb, since (18) shows that even instances of non-c-commanding pronouns which precede coreferring R-expressions are bad.

However, one may suggest that it is possible to check Condition C effects in SC when instead of a pronoun, an R-expression is used, as in (20).

(20) ?* Oni su otpustili Petra_i zbog Petrovih_i izjava.

they are fired Petar because of Petar's statements

'They fired Petar because of Petar's statements.'

Although such examples are degraded, one might object that they are not degraded due to Condition C, but due to some sort of blocking of the use of an R-expression in cases where potentially a pronoun could be used. If these examples are indeed Condition C violations, then it would imply that object shift in SC is obligatory. But, since we cannot be absolutely sure in this, at this point I will conclude that an object at least can raise out of VP in SC, which suffices for the analysis to be proposed below.

If a verb takes two objects, both objects can raise above VP adjuncts, as the following data show.

(21)a. Marija je namjerno dva put pokazala Vesnu Igoru.

Marija is intentionally twice showed Vesna-acc Igor-dat

'Marija intentionally twice showed Vesna to Igor.'

namjerno > dva put

b. Marija je pokazala Vesnu Igoru namjerno dva puta.

Marija is shown Vesna-acc Igor-dat intentionally twice

‘Marija showed Vesna to Igor intentionally twice.’

namjerno > < dva puta

In (21a), the first adverb has scope over the second adverb. In (21b), however, just as in cases with a single object, the sentence is ambiguous with respect to the scope of adverbs: both the reading where *dva puta* has scope over *namjerno*, and the reading where *namjerno* has scope over *dva puta* are available. This means that both objects and the participle must have moved out of VP.⁵

The quantifier float data yield the same result as in the case of a single object.

Both objects could be found floating quantifiers, which means that both of them can move to an A position:⁶

⁵ In both single object and double object shift cases, questions of locality of A movement arise, since objects are crossing the subject on their way out of VP. The question is why this is not a Relativized Minimality violation. As far as single object shift case is concerned, a special technical device of equidistance (Chomsky 1993) was devised to allow this type of crossing. In cases of double object shift, the situation is trickier since equidistance as formulated in Chomsky (1993) does not help if both objects are crossing the subject (see Thraisson and Collins (1993) for a similar situation in Icelandic, who also offer a technical solution to this problem). I will not adopt these technical instantiations here. It is not, however, that Relativized Minimality effects are not observed with A movement. Relativized Minimality effects arise in cases of Superraising, as illustrated in (i).

(i) Peter seems that it was arrested.

Superraising, however, involves interclausal dependencies. I will take it that conditions on A movement should be formulated in such a way which would disallow such interclausal dependencies, but allow crossing dependencies within a single clause.

⁶ These cases cannot be instances of movement of NP across Q within the objects, as it has been observed by Shlonsky (1991) to exist in Hebrew. Bošković (1997), however, gives evidence that this is not possible in SC. If it was possible, then (i) would be expected to be good:

(i) * *Studente sve su istukli.*
 students all are beaten
 ‘They beat all the students.’

- (22)a. Marija je podijelila kolace prijateljima svim.
 Marija is given cookies-acc friends-dat all-dat
 ‘Marija gave cookies to all friends.’
- b. Marija je podijelila kolace sve prijateljima.
 Marija is given cookies-acc all-acc friends-dat
 ‘Marija gave all cookies to her friends.’⁷

Both objects can bind an anaphor in an adverb:

- (23)a. Marija je predstavila Vesni Petra i Marka_i za vrijeme
 Marija is introduced Vesna-acc Petar and Marko-acc during
 sudjenja jednog drugom_i.
 trial one-gen another-dat
 ‘Marija introduced Vesna to Petar and Marko during each other’s trials.’
- b. Marija je predstavila Vesnu Petru i Marku_i za vrijeme
 Marija is introduced Vesna-acc Petar and Marko-dat during
 sudjenja jednog drugom_i.
 trials one-gen. another-dat
 ‘Marija introduced Petar and Marko to Vesna during each other’s trials’

As discussed in the previous chapter, SC clitics could be located either after the first word or the first constituent of their sentence. This means that in (i) NP Q sequences do not form a constituent, which would be expected if such sequences could be derived by NP movement across Q within the nominal phrase.

⁷ The following quantifier float combinations are also possible, which follows from the structures assumed for double objects below:

- (i)a. Marija je podijelila prijateljima svim kolace.
 Marija is given friends-dat all-dat cookies
- b. Marija je podijelila prijateljima kolace sve.
 Marija is given friends-dat cookies-acc all-acc

In (23a), the reciprocal in the VP adjunct is bound by the direct object, while in (23b) it is bound by the indirect object. (23) thus shows that both direct and indirect object can raise to an A-position higher than VP.

To summarize this section, I have shown that all arguments of verbs raise out of their VPs. In chapter 2, it was shown that both non-finite and finite verbs in SC raise out of their VPs. In the light of these things, let me answer the questions posed above.

3.2.2. Neutral Focus and Sentential Stress

As it was mentioned above, when the sentences in (1-2) are partitioned in the presupposed and focussed part, the neutral focus reading is obtained when the presupposed elements precede the element in focus, leaving it in the final position. The question is why this is so. In order to try to answer this question, let me first discuss the connection between main sentential stress and focus.

The pioneering works in the generative tradition about the relationship between stress and focus are Jackendoff (1972) and Chomsky (1971). The basic idea about this relationship put forth in these works was that main sentential stress was assigned autonomously by phonological rules, and that stress in languages as English was an identifier of focus. The focus of a sentence was defined as any constituent containing the main stress of the sentence.

This view was based on the notion of neutral and marked stress. No sentence in languages such as English can be pronounced without a prominent stress. So, there must be a rule (the Nuclear Stress Rule of Chomsky and Halle 1968) that automatically assigns

main stress to a sentence, irrespective of any discourse considerations. This stress is perceived as neutral stress, as, for example, in any sentence uttered in an ‘out of the blue’ context. The focus associated with this stress is identified as neutral focus. In some cases, however, the main stress of the sentence is not perceived as neutral, as the stress on the pronouns in the sentence in (24).

(24) SHE didn’t do it, HE did it.

Marked stress has been argued to be assigned by procedures different than the Nuclear Stress Rule. (Chomsky and Halle 1968, Cinque 1993, Zubizarreta 1998, among others).

Such a distinction between neutral and marked stress and focus was, however, repeatedly argued against (Bolinger (1972), Schmerling (1976), Selkirk (1984), Guessenhoven (1984), among others). Their major argument was based on examples from English in which the main sentential stress perceived as neutral stress was located in a position different from the one predicted by the Nuclear Stress Rule, as formulated in Chomsky and Halle (1968). Some such examples are given in (24) from Schmerling (1976), cited in Cinque (1993):

(25)a. I’d give money to Mary, but I don’t TRUST Mary.

b. Has John read *Tristram Shandy*? He doesn’t READ novels.

In these examples, the main sentence stress falls on the verb, instead of on the object which the Nuclear Stress Rule would dictate, and is perceived as neutral stress. Cases such as these have led these authors to argue that in an appropriate context, the main stress can fall on any word in the sentence and that the location of the main sentential stress in English cannot be predicted by a rule. As a result, the main sentential stress does not identify focus, but instead the main sentential stress is a manifestation of an

independently determined focus-presupposition structure. This view has been the winner of the debate regarding the relation of focus and stress for a long time, until Cinque (1993) reopened the issue.

Cinque (1993) offers a new perspective on the Nuclear Stress Rule and argues that Chomsky's (1971) view of stress assignment and focus could be maintained. Cinque's (1993) major insight with respect to the Nuclear Stress Rule is that no parametrization of this rule is necessary, as the previous analyses (Chomsky and Halle 1968, Halle and Vergnaud 1987) have assumed. As it will be shown in more detail below, Cinque argues that the assignment of main phrasal and sentential stress could entirely be determined on the basis of constituent structure. So, for example in languages such as English and German, any difference in phrase and sentence stress patterns follows from the differences in their constituent structure. The NSR applies to every sentence and blindly assigns stress on the most embedded element in the sentence. The stress assigned by the Nuclear Stress Rule is neutral stress. Examining what look like potential counterarguments to such a position (as for example, examples in (24)), Cinque comes to the conclusion that discourse conditions may sometimes interfere with the output of the NSR, with a result that a different stress pattern is assigned. He argues that the two types of sentential (or phrasal) stress can be distinguished. The relevant distinction for him is a distinction between sentence and discourse grammar. The discourse grammar can change the output of the sentence grammar of which the NSR is a part. If in a given context, it is required to use as a focus a constituent that was not assigned main stress by the NSR, the discourse grammar may do that. According to Cinque, the discourse grammar employs

two operations to do this. It can either destress the original stress or assign an additional stress to the relevant constituent that needs to be a focus.

Of particular interest here is Cinque's observation that languages with freer word order options may find a way to express more focus structures with neutral stress. Cinque first considers English examples from Schmerling (1976), given in (26).

(26)a. Truman DIED.

b. JOHNSON died.

As first pointed out by Schmerling (1976), when they were uttered, both of these sentences were 'out-of-the blue' sentences, denoting new events. However, when (26a) was uttered, President Truman's condition had been the subject of daily news reports for some time, so it was appropriate for him to be taken as a part of the presupposition. President Johnson died, however, somewhat unexpectedly, so it would not have been appropriate to consider him as part of the presupposition. So, in sentences with unaccusative verbs in English, if the subject is presupposed, the stress falls on the verb, with the subject raised to AgrSP as in all other sentences. If the subject needs to be focus, the subject is again in AgrSP, but the stress falls on it.

In Italian, however, the situation is different. As Cinque points out, the Italian sentences appropriate to the contexts above are those in (27a) and (27b), but not the one in (27c).

(27)a. Truman è MORTO.

b. E' morto JOHNSON.

c. # JOHNSON è morto.

Thus, Italian, which allows the argument of unaccusatives to remain in its D-structure position, requires it to remain in (27b), where the focus needs to be on the subject. In this case the subject will be assigned stress by the Nuclear Stress Rule, and the final outcome will be a neutral focus structure. In the case of (27a), where the argument is presupposed, it is required to be in AgrSP, so that it does not receive stress by the Nuclear Stress Rule. If the main stress is assigned to it, it has to be focus, but it cannot be focus, since it is presupposed. If the argument has to be in AgrSP in cases where it should not be assigned the main stress, then it seems self defeating to stress it, once it is in AgrSP, as in (27c). English, however, does not have the option of leaving the argument of an unaccusative in situ to receive the stress by the Nuclear Stress Rule, and the only option is to raise it and assign it the main stress there.

SC patterns with Italian in this respect, as illustrated in (28):

(28)a. Truman je UMRO.

Truman is died

'Truman died.'

b. Umro je JOHNSON.

died is Johnson

'Johnson died.'

c. # JOHNSON je umro.

Johnson is died

'Johnson died.'

In a situation where people had been aware of Truman and his illness before he died, when the news about his death was uttered, a felicitous way to express the news under

neutral focus would have been (28a). On the other hand, in a situation where Johnson's death came unexpectedly, the only way to express the news under neutral focus is (28b). If *Johnson* raises and is stressed, as in (28c), the only meaning the sentence has is that it is Johnson and not somebody else that died, i.e., it receives a contrastive interpretation. Given this, I will conclude that in SC, an element is a neutral focus, if it contains main stress assigned by the Nuclear Stress Rule. Furthermore, if a particular word order allows the assignment of stress by the Nuclear Stress Rule to the focussed element, then this option will be utilized.

Reinhart (1995, 1996, 1998) and Neeleman and Reinhart (to appear) observe that a similar situation holds with respect to object scrambling in Dutch. Reinhart (1995, 1996, 1998), Neeleman and Reinhart (to appear) consider cases of object scrambling in Dutch, where an object can either precede or follow a VP adverb:

- (29)a. *dat Jan langzaam het boek las.*
 that John slowly the book read
 'that John read the book slowly'
- b. *dat Jan het boek langzaam las.*
 that John the book slowly read
 'that John read the book slowly'

They observe that the scrambled and unscrambled version of the sentence cannot be used in the same contexts. The unscrambled version is used in the context where the object needs to be a focus, but if it does not, the object needs to be scrambled. They come to such a conclusion by looking at examples such as (30):

- (30)a. A: How gaat het met de review van Jan's boek?
 how goes it with the review of Jan's book
 'How is the review of John's book going?'
- b. B: Ik heb het boek eindelijk gelezen
 I have the book finally read
 'I have finally read the book.'
- c. B: # Ik heb eindelijk het boek gelezen
 I have finally the book read

The context question in (30a) determines that the object DP in the answer sentence is pre-assumed and cannot be a focus. The contrast between (30b) and (30c) shows that a felicitous answer to this question can be only the sentence in which the object DP is scrambled.

Reinhart (1995, 1996, 1998) and Neeleman and Reinhart's (to appear) account of these facts is tied to the PF considerations of the main sentential stress. Following Cinque (1993), they assume that every sentence is automatically assigned stress by the Nuclear Stress Rule, which assigns stress to the most embedded constituent. In Cinque's system given two sisters, the more embedded constituent is one selected by the other, with a result that in both OV and VO languages, the main stress falls on the object. Reinhart (1995, 1996, 1998) and Neeleman and Reinhart (to appear) assume that main stress identifies focus. In their system, every sentence is associated with a focus set, which contains all constituents containing the main stress of the sentence. So, in (31), where the main stress falls on the object, the focus set includes the object, VP and IP:

- (31)a. [IP subject [VP V object]] (in VO languages)

b. [IP subject [VP object V]] (in OV languages)

Focus set: {IP, VP, object}

One of the elements in the set is selected as an actual focus. Given the context, if no element can be selected as focus, the sentence is infelicitous in that context. In this case, an operation of stress shifting may apply, which shifts the stress to the element that needs to be in focus, but is not in the focus set. An automatically assigned main stress to the sentence is neutral stress. The main stress arising from the stress shift is marked because it violates economy, according to Reinhart 1995. Similarly to Cinque (1993), Neeleman and Reinhart (to appear) and Reinhart (1995, 1996, 1998) assume that stress shifting operations are either destressing of the original stress or stress strengthening.

In an S Adv OV sentence in Dutch, the default stress assigned by the NSR always falls on the object. In cases, however, where the verb needs to be focused, according to Reinhart, and Neeleman and Reinhart, a neutral focus structure arises when the object is scrambled (in their system, it is actually base-generated preceding the adverb), and the NSR is able to assign the main stress to the verb.

The next question to be explored with respect to SC is how the element in focus gets into the position in which it is assigned stress by the Nuclear Stress Rule, and how are the presupposed elements removed from the position in which they would be assigned the main stress by the NSR. These questions should be considered in the light of the fact illustrated above that all arguments of the verb, and verbs themselves raise in SC out of their VP. It was shown that verbs, except auxiliaries do not raise above T, and that arguments of the verb occupy an A-position higher than VP in overt syntax.

3.3. Transitive Sentences

The canonical word order for transitive sentences in SC is SVO. This is the least marked order of elements when the sentence is uttered in an out-of-the-blue context, where the object carries the stress assigned by the Nuclear Stress Rule, as in (32).

(32)a. Šta se dešava? what SE happening

‘What is going on?’

b. Mačka hvata miša.

cat catches mouse

‘A cat is catching a mouse.’

Assuming that syntactic movement of elements creates copies (Chomsky 1993, 1995), and given what is known so far about the position of the elements in a SC sentence, a minimal structure needed to accommodate the outcome of all movements is given in (33):⁸

(33) [AgrSP mačka [TP mačka hvata [AgrOP miša hvata [VP mačka hvata miša]]]

Given the standard view of Chomsky (1993, 1995), after the sentence reaches the Spell-out and goes to PF, the heads of chains (i.e., the highest copies) will be pronounced, and the final result obtained is as expected: *Mačka hvata miša* ‘A cat is catching a mouse.’

The Nuclear Stress Rule will assign the main stress to the object, as predicted.

Consider now the order OVS where the subject receives the main sentential stress, and where the verb and object are presupposed, as in (34b), which is an answer to the question in (34a).

⁸ I have provided evidence that the finite verb raises out of its VP and does not cross TP. For now, I will put the verb into T, but below I will show that it is actually in a maximal projection between TP and AgrOP.

(34)a. Ko hvata miša?

who catches mouse

‘Who is catching a mouse?’

b. Miša hvata mačka.

mouse catches cat

‘A cat is catching the mouse.’

Sentences such as (34b) have been assumed to be a characteristic of topic prominent languages in the sense of Kiss (1995). Topic prominent languages are distinguished from subject prominent languages by the fact that in topic prominent languages, the structurally highest argument in an active sentence need not always be the subject, i.e., the thematically highest argument in VP, as it is the case with the subject prominent languages. In topic prominent languages, it can be any category capable of functioning as a topic. A typical subject prominent language is English, while some topic prominent languages are Tagalog, Chinese, Hungarian (Kiss 1995) or Finnish (Holmberg and Nikkane to appear).

To account for similar sentences in Finnish, Holmberg and Nikanne (to appear) posit the existence of a functional category between C and T, which they call FP and which roughly corresponds to AgrSP. One of the reasons that they do not equate this phrase with AgrSP is that while the Spec position of this phrase is the default position for the nominative subject, other categories may fill it too. The generalization is that a category in this position, when referential, has the discourse function of topic. The head F has a strong uninterpretable feature, which they call an EPP feature. Furthermore, Holmberg and Nikkane (to appear) assume that arguments are all provided with a feature

[+/- Foc], which is either inherent (e.g., weak pronouns and clitics are inherently [-Foc]), or assigned to the argument when it is merged into a syntactic tree. According to them, the feature [-Foc] is an uninterpretable feature, which must be checked. They assume that it is checked by the EPP feature in F. The EPP feature has an attract all property, in that it attracts all [-Foc] features, but due to economy reasons, they argue, only one [-Foc] feature needs to pied-pipe phonological material overtly, since this is the minimum necessary to check the strong EPP feature of F. So, they argue that the structure of the sentence in (35a), which is a felicitous answer to the question ‘Who wrote this book?’ is as given in (35b).

(35)a. Taman kirjan on kirjoittanut Graham Greene.

this book has written Graham Greene

‘Graham Greene wrote this book.’

b. [FP [taman kirjan]_i [F’ on_j [TP t_i [T’ t_j [AuxP t_j [PrtP kirjoittanut_k [VP Graham Greene [V’ t_k t_i]]]]]]]]

The object moves to FP, the verb raises out of its VP, while the subject stays in situ, and the desired word order is obtained. The question is whether the SC example in (34b) can be accounted for in a similar way, by positing a functional category attracting topics, raising the verb and leaving the subject in situ. While I will ultimately argue that a maximal projections such as FP is necessary in SC as well, which can host topic objects, the question is what would make the subject stay in situ in such examples. Recall that these examples in SC are felicitous in contexts where the subject is an element in focus. If the whole sentence is focused (when all elements in the sentence are [+F], which is the canonical word order in SC for transitive sentences, or if the subject is presupposed, the

subject cannot remain in this position, it has to appear in the front of the sentence, as illustrated above, and repeated here in (36-37).

(36)a. Šta se desava?

what SE happens

‘What is happening?’

b. Macka hvata misa.

cat catches mouse

‘A cat is catching a mouse.’

c. #Misa hvata macka.

mouse-acc catches cat

(37)a. Sta macka radi?

what cat does

‘What is the cat doing?’

b. Macka hvata misa.

cat catches mouse

‘The cat is catching a mouse.’

c. #Misa hvata macka.

mouse-acc catches cat

It is standardly assumed that subjects front for its formal features checking and EPP reasons. If one were to claim that in cases such as (34), the subject really stays in situ, then one introduces an amount of optionality in the system - sometimes the subject has to move to check its formal features in the overt syntax, sometimes it does not. An alternative might be to consider that the subject in these sentences always moves in overt

syntax to TP (or AgrSP), as in all other cases, and then it is somehow extraposed or scrambled. If this was true, the subject would have to adjoin to AgrSP to the right, with a result that it follows all other elements in the sentence. However, it is questionable what this movement would be driven by. Alternatively, this movement of the subject might be argued to be a pure case of scrambling, which adjoins the subject to the right of AgrSP. This possibility, however, runs into problems of optionality and Last Resort, since scrambling would have to be an overt process happening after the movement of the subject to TP or AgrSP.⁹ However, it is not clear why this scrambling option has to be used only in cases where the subject is focused, and not in other cases such as (36-37). Other syntactic ways of deriving this word order could be conceived, for example, the subject is base-generated in an adjoined position on the right, and it is some coindexed *pro*-like element fulfilling all the roles that the subject itself would normally do in syntax (checks features, binds elements, etc.). Although it is conceivable, this right dislocated option usually occurs in cases where the right dislocated elements are presupposed, and not focused. Furthermore, the derivation of other word orders to be discussed below would show that it is insufficient. Also, as it will be seen below, the extraposition, scrambling and right-dislocation accounts would not put the subject into the right position where it could receive main stress of the sentence by the nuclear stress rule. In these accounts, the subject would have to be pretty high in the tree, and, as I will show below, the main stress of the sentence falls on the most embedded element in the

⁹ Saito and Fukui (1998) offer an analysis of scrambling as optional movement under which head initial languages allow rightward optional movement, while head final languages allow leftward optional movement. In their system, then, these examples would not present a problem for Last Resort. However, it would suffer from other problems mentioned if scrambling is involved here.

sentence in SC. At this point I will conclude that the syntax offers no good solution for deriving the OVS order, if we do not want to allow optionality into the system.

There is evidence showing that the subject cannot stay in its in-situ position in SC. Bošković (forthcoming) considers examples such as (38), to show that subjects must move overtly in SC.

(38)a. *Nesumnjivo Jovan čita knjigu.

undoubtedly Jovan reads book

‘Jovan is undoubtedly reading the book.’

b. Jovan nesumnjivo čita knjigu.

Jovan undoubtedly reads book

‘Jovan is undoubtedly reading the book.’

In (38a), the sentential adverb *nesumnjivo* ‘undoubtedly’ precedes the subject, and the sentence is bad. When the subject precedes the sentential adverb, as in (38b), the sentence is good. Given that as Watanabe (1993) and Bošković (1995b, 1997a) argue, sentential adverbs are adjoined to TP, Bošković (forthcoming) concludes that the contrast between these two examples follows if subjects in SC have to move overtly obligatorily, i.e., they cannot stay below TP.

There might be further evidence that subjects are syntactically in a high position in examples such as (34). Consider (39b), as an answer to (39a):

(39)a. Ko_i donosi odluku protiv svoje_i volje.

who brings decision against his will

‘Who is making a decision against his will?’

b. Protiv svoje_i volje, odluku donosi Marko_i.

against his will decision brings Marko

‘Marko is making a decision against his will.’

In (39b), the subject is in the final position in the linear order, which might be taken as the in-situ position. However, it can still bind a reflexive in the adverb (which is fronted).¹⁰ If one assumes that adverbs are adjoined in a position higher than objects, and if, as Lasnik (1995c) argues, formal feature movement cannot license binding relations, the subject in (39b) must be in a position higher than VP. Recall the SC sentence structure posited for the sentence in (33), repeated here as (40).

(40) [AgrSP subject [TP subject verb [AgrOP object verb [VP subject verb object]]]

The lowest position from which the subject can bind the VP adverb in this structure is

TP.

¹⁰ The question is how binding is possible at all in this case, since on the surface it looks as though the adverb is out of the c-command domain even of the highest positions in which the subject could be found (i.e., TP or AgrSP). Since binding obtains, however, it must be that the adverb was fronted from a lower position. Given the evidence against Larson’s (1988) view of adverb placement discussed above, I will assume that this adverb is base-generated at least in a position adjoined to VP, but it could be higher too (since it is not clear that it is, actually, a VP adverb). From this position, it is then fronted to the sentence initial position. Now, the question is what mechanism allows binding into the fronted adverb. There are two possibilities: either binding took place before the movement to the sentence initial position, or after it by virtue of reconstruction. One could claim that binding took place before the adverb was fronted. This would be possible under Belletti and Rizzi (1988), or Lebeaux’s (1994) view of Condition A, who argue that Condition A is an ‘anywhere’ condition in the sense that it is enough to satisfy it once at any point in the derivation. However, I cannot adopt their view, since this would produce incorrect results in all cases where the object(s) raise(s) across the subject on their way to AgrOPs. At the point when the object(s) cross the subject, given this view of binding, one would expect that the object(s) could bind into the subject, but this is not possible, as illustrated in (i).

(i) * Prijatelji jedan drugog vole Petra i Marka
 friends-nom one another-gen love Petar and Marko-acc
 ‘Friends of each other love Petar and Marko.’

Recall that in (i), the verb raises (almost) as high as T, while the object can raise to AgrOP. At the point when the object is raising to AgrOP, it will be crossing the subject in SpecVP, and (i) would be predicted to be good, contrary to the fact. This is why I am forced to assume that binding in (39) above occurs by reconstruction. To allow reconstruction, the adverb has to be in an A’ position, since, crucially, reconstruction with A movement cannot be allowed, otherwise examples such as (i) would be ruled in again (on the lack of reconstruction with A movement see Chomsky 1995, Lasnik 1999, on the necessity of reconstruction with A movement, see Boeckx 1999).

As far as the position of the object in the sentence is concerned, it precedes the verb, which is in T (or, as we will see below, in a head between AgrOPs and TP), which means the object has to be in a position above T. If SC AgrSP can act as AgrSP in Finnish, in that it can be filled by elements other than nominative subjects, which can act as topics, then the object in (39b) might be in that position. However, if the subject raises in the overt syntax to TP for formal feature checking, then the order should be OSV, and not OVS. The question is how one gets the order OVS?

3.3.1. *Movement as Copy and Deletion and Pronunciation of Copies*

In the previous section, we have seen that syntactic mechanisms cannot satisfactorily derive the OVS order in SC, and we are faced now with the question how it is derived. Let me first summarize the points we have to bear in mind when considering this question:

- (41)a. The OVS order, under neutral focus reading, correlates with a certain focus-presupposition structure, i.e., it is used in the context where the subject needs to be focussed, and the rest of the sentence (the object and the verb) presupposed (as for example, in an answer to the question *Ko je udario Petra?* ‘Who hit Petar?’ – *Petra je udario Marko.* ‘Marko hit Petar.’), or only the object is presupposed (as, for example, in an answer to the question: *Šta si desilo Petru?* ‘What happened to Petar?’ – *Petra je udarilo auto.* ‘A car hit Petar.’).
- b. Stress and focus are related. According to Chomsky (1971), Jackendoff (1972), Cinque (1993), Reinhart (1995, 1996, 1998), Zubizarreta (1998), among others,

focus is identified by the main sentential stress. If the main sentential stress is assigned by the Nuclear Stress Rule, the constituent that contains it can be in focus.

- c. The verb and all arguments raise out of their VP in SC to functional projections. Verbs raise no higher than T, objects raise to AgrOPs, and the subject raises to TP or AgrSP. In the OVS order, there seems to be a mismatch with respect to the pre-spell-out position of the subject, which should be TP, or AgrSP, as discussed above, and position in which the subject appears in the surface order, which is following the verb and object.
- d. Presupposed phrases can scramble but cannot cross their clause boundaries.

If one puts (41a) and (41b) together, it looks as though the subject, which needs to be in focus, is in the final position, so that it could be assigned stress by the Nuclear Stress Rule, and thus obtain a neutral focus reading. Now, as summarized in (41c), it looks as though the subject in the OVS order should be in two places at the same time. It needs to be in either in AgrSP or TP. But if the subject is in that position, then there is no way that the verb and object can precede it. So, how do we resolve this paradox? A solution suggests itself if one combines the observations in (41a), (41b) and (41c) together with the copy and deletion theory of movement (Chomsky 1995), but with a relaxation of the constraint on the pronunciation of the highest copies which was assumed in Chomsky's (1995) copy deletion theory.

Before Chomsky (1993) (re)-introduced the copy and deletion theory of movement, the prevailing theory of movement was the trace theory. Under this theory, the pronunciation of non-trivial chains was a trivial issue. The head of the chain was always

pronounced, since this is the only position which contained phonological information. Under copy and deletion theory of movement, however, deciding which part of the chain to pronounce becomes an issue. Under this theory, which was introduced by Chomsky (1993), a syntactically moved element leaves behind a copy, rather than a trace. The motivation for the switch from traces to copies was Inclusiveness Condition, which is a condition barring syntax from introducing new elements into the tree that were not inserted from the lexicon, and restricting its ability only to rearranging elements introduced into the structure from the lexicon. So, syntax could not deal with traces any more, since they were not elements introduced into the structure from the lexicon. The copy and deletion theory of movement, however, conforms to the Inclusiveness Condition, since movement does not introduce any new elements that were not inserted from the tree. Under the copy and deletion theory of movement, successive cyclic movement can create a number of copies. According to Chomsky, in order to get a proper interpretation, at PF all but one copy should be deleted under identity, and copies should be deleted at LF as well in a manner which would yield a good result for interpretation. As far as LF is concerned, it is standardly assumed that LF has a choice in deciding which copy (or which part of a copy) to affect by deletion. While LF has a choice in deciding which copy to affect by deletion, there is no such choice for PF. PF has to leave the head of the chain, and delete the lower copies. However, several authors have recently argued that a lower copy in a non-trivial chain is sometimes chosen to be pronounced (see Groat and O'Neil 1995, Bobaljik 1995, 1999, Richards 1997, Hiramatsu 1997, 1999, Roberts 1998, Franks 1998, Bošković 1999, forthcoming).

Suppose now that we take seriously the view under which PF decides which copies to pronounce (and exclusively so). Suppose that syntax only establishes a relationship between positions which an element must occupy via movement as copying, and provides such structures to PF. PF then interprets these structures and decides which copies to pronounce. Now, the empirical evidence indicates that in the majority of cases, it is the highest copies that are pronounced. As, mentioned, however, there is a growing evidence showing that the pronunciation of the highest copies is not an absolute requirement. In particular, Bošković 1999, forthcoming, Franks 1998, Pesetsky 1997, Hiramatsu 1997, 1999 have shown that the lower copies may be pronounced to avoid some PF violation. This has lead Franks (1998), and Bošković (1999, forthcoming) to propose the view under which PF has only preference for the pronunciation of the highest copies, and that in cases where this would lead to a PF violation, a lower copy could be pronounced as well. Suppose that in some languages, PF may be even more relaxed in its choice of which copy to pronounce, in the sense that it lets its choice be affected by other PF processes, such as, for example, the assignment of the sentential stress. I will show that if we admit the latter possibility, it will provide an answer to the questions posed above regarding the interaction of word order, prosody and information structure in SC.

So, suppose that in SC, one of the factors involved in determining which copy to pronounce and which copies to delete is the assignment of the main sentential stress by the Nuclear Stress Rule. In particular, the interaction of the Nuclear Stress Rule and the copy deletion chooses to pronounce and delete those copies, which would yield the right outcome with respect to the assignment of the main sentential stress. We have seen that in sentences with the OVS order discussed above, where the subject needs to be in focus

and the rest of the sentence is presupposed, the subject is in TP or AgrSP in overt syntax. Suppose that after it moves, it leaves an identical copy in its in-situ position and the positions through which it moves.¹¹ PF then chooses to pronounce that copy of the subject which would allow the subject to bear the main stress of the sentence assigned by the Nuclear Stress Rule. The question is how this idea could be implemented.

In order to see how this might work, I will first discuss the algorithm for stress assignment developed by Zubizarreta (1998), in order to remedy shortcomings of the algorithm for default stress assignment devised by Cinque (1993).

3.3.1.1. The Stress Assignment and Copy Deletion

Cinque (1993) devised an algorithm for main stress assignment, based on Halle and Vergnaud's (1987) metrical theory, which would allow him to account for what he took to be a generalization about the main sentential stress: Nuclear stress falls on the most embedded element on the recursive side of the tree. The algorithm was meant to correctly assign main sentential stress on the object of the verb in transitive sentences or preposition in ditransitive sentences, regardless of whether the structure is head initial or final.

It has been shown, however, that Cinque's (1993) algorithm is inadequate for certain cases in German and English. As Zubizarreta (1998) points out, the major

¹¹ Lasnik (1999) has proposed that A movement does not leave a copy, based on the evidence that A-movement does not reconstruct, and a lack of separate interpretative roles of potential copies of an A-moved element. However, see an interesting proposal by Boeckx (1999), who reanalyzes Lasnik's reconstruction evidence without having to assume that A movement does not leave a copy. The crux of Boeckx's (1999) theory is that arguments are frozen for interpretation in the positions in which they check Case (aside for indefinites). Once an argument moves to an A position for Case checking, it will be interpreted in that position.

problem that it faces is that it fails to account for the ambiguity of the main stress assignment in sentences with intransitive verbs in English and German. Consider the following examples.

(42)a. Hans hat ein BUCH gekauft.

Hans has a book read

‘Hans read a book.’

b. #Hans hat ein Buch GEKAUFT.

(43)a. Es heisst, dass ein JUNGE kommt.

it is-said that a boy comes

b. #Es heisst, dass ein Junge KOMMT.

it is-said that a boy comes

(44)a. Es heisst, dass ein Junge GETANZT hat.

it is-said that a boy danced has

b. Es heisst, dass ein JUNGE getanzt hat.

(45)a. TRESPASSERS will be prosecuted.

b. Trespassers will be PROSECUTED.

(46)a. MARY is dancing.

Mary is DANCING.

(44) shows that in sentences with an intransitive verb, the nuclear stress can fall either on the subject or the verb. In sentences with an unaccusative verb (43), the stress falls on the subject only. In English, the same situation obtains with intransitives as in German. As

far as sentences with unaccusative/passive verbs in English are concerned, Zubizarreta (1998) points out examples in (45), where the stress can fall both on the verb and on the subject, but admits that it is less clear in most cases whether this is possible in the case of the verb. The stress prefers to be on the subject. In all of these sentences, Cinque's (1993) system would predict the stress to fall uniformly on the verb. The problem is even harder in the light of the examples in (47-48).

(47)a. Das Taxi kommt SPÄT.

the taxi comes late

b. # Das TAXI kommt spät.

(48)a. Our dog mysteriously DISAPPEARED.

b. #Our DOG mysteriously disappeared.

These examples reveal that in sentences with an unaccusative verb, if an adjunct is present in addition to the verb and the subject, the stress does not fall on the subject. There is no natural way in which the contrast between the examples in (43) and (45) on one side and (47) and (48) on the other can be accounted for in Cinque's system. In order to accommodate all of these cases, Zubizarreta (1998) revises the formulation of the Nuclear Stress Rule, which will allow her to maintain Chomsky's (1971) and Jackendoff's (1972) view of the relationship between stress and focus. In particular, she argues that the relevant examples from German and English show that the NSR is sensitive to asymmetric c-command and selectional ordering relations. As a result she puts forth a formulation of a modular NSR, which consists of two parts: one sensitive to asymmetric c-command relations (C-NSR), and the other sensitive to selectional ordering (S-NSR). The C-NSR and S-NSR are formulated as in (49):

(49)C-NSR: Given two nodes C_i and C_j , that are metrical sisters, the one lower in the syntactic asymmetric c-command¹² ordering is more prominent.

S-NSR: Given nodes C_i and C_j , that are metrical sisters, if C_i and C_j are selectionally ordered, the one lower in the selectional ordering is more prominent.

Selectional order is determined as follows:

(50)(C, T, $V_1, \dots, V_i, P/V_m, D_m$), with possibly $m=1$

(C, T, ..., V_i, D_i), for $i = 1, 2, \dots, m-1$ (for cases where $m > 1$)

where $D_i, i = 1, 2, \dots, m-1$ is the nominal argument of V_i (for the cases where $m > 1$)

and D_m is the nominal argument of the lowest (possibly only) verb or prepositional predicate (V/P_m) in the selectional ordering.

The main phrasal prominence is then computed by the rule in (51).

(51)The terminal element dominated solely by prominent constituents within a phrase is designated as the rhythmically most prominent one within that phrase.

¹² The joint requirement of sisterhood and of asymmetric c-command in the structural description of the C-NSR is contradictory if the classical definition of asymmetric c-command is assumed. This is why Zubizarreta (1998) revises the definition of 'c-command' for the purpose of application of the C-NSR:

(i) A c-commands B =_{def} A and B are visible to the syntactic computation (i.e., are either heads or maximal projections (excluding segments)) and (a) A and B are sisters of (b) there exists a X such that A and X are sisters and X dominates B.

She also introduces the following convention:

(ii) If A c-commands B, then A c-commands X, X a projection of B that does not contain A.

Although these definitions allows a specifier to asymmetrically c-command its sister, Zubizarreta contends that in the case of a head and its complement, the contradiction entailed in the formulation of the C-NSR is not removed. This means that in such cases, the C-NSR could not apply, unless the complement is metrically nondistinct from some constituent that it dominates. In this case, the structural requirement of asymmetric c-command and sisterhood will be met. She takes advantage of this, since in her analysis, only such situations would arise, and not those where a head and a complement are directly considered.

However, she contends that 'it might suggest that the ordering relation 'asymmetric c-command' should be defined not in terms of asymmetry, but in some other terms. Perhaps asymmetric c-command should be defined to hold primitively between a head and the constituents c-commanded by that head.' (p.171, fn. 9). I will, nevertheless, assume Zubizarreta's formulation of the C-NSR, keeping in mind this point. If a situation arises where a head and its complement are considered by the C-NSR, I will simply assume that the complement is lower than its head for this purpose.

The NSR is thus formalized as a local rule that applies to a pair of metrical constituents and assigns relative prominence to one of them. The relative prominence between two constituents is established by the NSR iff they are both metrically visible. According to Zubizarreta (1998), metrical sisterhood is a less restricted version of syntactic sisterhood, in the sense that it may ignore intervening syntactic constituents which are metrically invisible. According to Zubizarreta, typically constituents which are phonologically silent, such as traces (or in my system copies), are metrically invisible. In addition, in some languages certain types of phonologically realized constituents may also be metrically invisible. This is the case with constituents with reduced or null stress. These are functional categories such as determiners, light lexical categories such as auxiliaries and certain prepositions, defocalized and anaphoric constituents. The NSR establishes relative prominence between two constituents iff they are both metrically visible. To illustrate the notion metrical sisterhood, and its difference from syntactic sisterhood, Zubizarreta considers the structure in (52), where each C_i , $i = 1, 2, 3, 4, e$ is a head, and C_e stands for a metrically invisible constituent:

(52) $[C_1 C_1 [C_e C_e [C_e [C_4 C_4 C_e] [C_e C_e [C_2 C_2 [C_3 C_3 C_e]]]]]]]$

The pairs of metrical sisters in (52) are given in (53):

(53)a. C_i and $[C_e C_e [C_e [C_4 C_4 C_e] [C_e C_e [C_2 C_2 [C_3 C_3 C_e]]]]]$

b. C_i and $[C_e [C_4 C_4 C_e] [C_e C_e [C_2 C_2 [C_3 C_3 C_e]]]]]$

c. C_e and $[C_e [C_4 C_4 C_e] [C_e C_e [C_2 C_2 [C_3 C_3 C_e]]]]]$

d. $[C_4 C_4 C_e]$ and $[C_e C_e [C_2 C_2 [C_3 C_3 C_e]]]$

e. $[C_4 C_4 C_e]$ and $[C_2 C_2 [C_3 C_3 C_e]]]$

f. C_2 and $[C_3 C_3 C_e]$

g. C_2 and C_3

h. C_4 and C_e

According to Zubizarreta, of these pairs, only those in (53 a,b,c,d,f,h) are sisters in the standard syntactic sense. The pairs in (53 b,e,g) are not syntactic sisters, but they are metrical sisters because they are separated only by metrically invisible constituents in the syntactic tree. Given this, Zubizarreta defines sisterhood over equivalence classes of constituents. Two constituents will count as equivalent from the point of view of the relation of metrical sisterhood, just in case they differ only by metrically invisible heads. She then introduces the relevant notion of metrical nondistinctness:

(54) Constituents A and B are metrically nondistinct $=_{def}$ A and B dominate the same set of metrically visible heads.

This enables her to define the notion of metrical sisterhood as in (55):

(55) Constituents X and Y are metrical sisters $=_{def}$ there exist two constituents Z and W such that (a) Z and W are sisters and (b) Z (resp. W) is metrically nondistinct from X (resp. Y).

Zubizarreta points out that this definition implicitly involves a notion of metrical nondistinctness of structural analyses, which she formalizes in (56).

(56) Two analyses ..., C, ... and ..., K, ... of the syntactic tree are metrically nondistinct at (C, K) $=_{def}$ the constituents C and K are metrically nondistinct.

Given this, she revises the definition of metrical sisterhood as follows:

(57) Constitents X and Y are metrical sisters =_{def} there exists an analysis of the syntactic tree ..., Z, W, ... such that (a) Z and W are sisters and (b) the analysis ..., Z, W, ... is metrically nondistinct from the analysis ..., X, Y, ... at (Z, X) and at (W, Y).

Finally, Zubizarreta adopts (58) as a general convention for the application of the NSR.

(58) Given two analyses of the syntactic tree ..., C_i , ..., C_j , ... and ..., K_i , ..., K_j , ... such that ..., C_i , ..., C_j , ... and ..., K_i , ..., K_j , ... are metrically nondistinct at (C_i , K_i) and at (C_j , K_j) and (C_i , C_j) meets some condition P of the structural description of the NSR in the standard sense, then (K_i , K_j) is taken to meet P as well.

As an illustration, consider the two pairs of categories (C_2 , [C_3 C_3 C_e]) in (53f) and (C_2 , C_3) in (53g). The notion of metrical nondistinctness allows for C_2 and C_3 to be metrical sisters. C_2 and [C_3 C_3 C_e] are syntactic sisters, and [C_3 C_3 C_e] and C_3 are metrically nondistinct. In other words, C_2 and C_3 are sisters in the derivative sense defined above. The notion of metrical nondistinctness which applies to all aspects of the structural description of the NSR allows for a derivative definition of asymmetric c-command relation between the two members of each pair in (53). The categories C_2 and [C_3 , C_e] are syntactic sisters, and, therefore, strictly speaking, no asymmetric c-command relation holds between them. But, because on the one hand, C_2 asymmetrically c-commands C_3 , and on the other hand, C_3 and [C_3 , C_e] are metrically nondistinct, C_2 asymmetrically c-commands [C_3 , C_e] derivatively as far as the NSR is concerned.

Zubizarreta shows that languages may vary with respect to whether both parts of the NSR apply, and with respect to the relative ordering of the two parts of the rule. In particular, she shows that both C-NSR and S-NSR are active in German and English. In German, S-NSR takes precedence over C-NSR. In English there is no relative ordering in

the application of C-NSR and S-NSR, at any point any of them can apply if the relevant conditions are met. In French, Italian and Spanish only the C-NSR is active. Consider the example in (42) as an illustration of how her system works. She gives the following structure for the example in (42):

(59) [CP Karl_i [*hat* [e_i [*v_i* [*ein Buch*₂ [*v₂* gekauft [e₂]]]]]]]]]

According to Zubizarreta, the italicized material in German is metrically invisible, so it will be disregarded by the NSR. Recall that in German S-NSR applies before C-NSR. According to the conventions given above, the metrical sisters *Karl* and [*ein Buch*₂ [*v₂* gekauft [e₂]]], metrically non-distinct from [*ein Buch*₂ [*v₂* gekauft]] are not selectionally ordered, so S-NSR will not apply. On the other hand, they are ordered with respect to asymmetric c-command, so the C-NSR applies and assigns prominence to the rightmost constituent, namely [*ein Buch*₂ [*v₂* gekauft [e₂]]]. The algorithm reapplies to the metrical sisters *Buch*₂ (metrically nondistinct from *ein Buch*) and [*v₂* gekauft [e₂]]], metrically nondistinct from [*ein Buch*₂ [*v₂* gekauft]]. These are ordered selectionally, hence the S-NSR applies, assigning stress to *ein Buch*, the nominal argument of the last V in the selectional chain. The stress is then assigned correctly.

In (43b), *ein Junge* and [*kommt e*] (metrically nondistinct from *kommt*) are metrical sisters. Furthermore, they are derivatively selectionally ordered due to the fact that [*kommt e*] and the head *kommt* are metrically nondistinct. The S-NSR assigns prominence to the DP *ein Junge*, which is the nominal argument of the only verb in the selectional chain. *Junge*, metrically nondistinct from *ein Junge* is therefore unambiguously the most prominent terminal element in that sentence.

As far as the example in (44) with an intransitive verb is concerned, the nuclear stress can fall either on the subject or the verb in German. To account for this, Zubizarreta introduces the following Auxiliary statement to the convention in (60) for the application of the NSR.

(60) If some projections of the verbal components V_i and V_j of the lexical verb are metrically nondistinct, then V_i and V_j are analyzed as metrically nondistinct for the purposes of applying the interpretative convention in (58).

According to Zubizarreta, this clause is optional. If it applies, the stress will fall on the subject, if it does not the stress will fall on the verb.

In addition to the NSR, Zubizarreta (1998) introduces the following rule, which she calls the Focus Prominence Rule (FPR):

(61) Focus Prominence Rule (FPR)

Given two sister categories C_i (marked [+F]) and C_j (marked [-F]), C_i is more prominent than C_j .

The purpose of this rule is to capture the relationship between the F-structure of a sentence and prosody. F-structure is the articulation of a sentence into focus and presupposition, which in Zubizarreta's system is done through the presence of feature [+/-F]. The focussed constituents in a sentence are marked with a feature [+F], while the presupposed ones are marked with the feature [-F]. If a constituent dominates both [+F] and [-F] constituents, it is unmarked for the feature [F]. The syntactic structure annotated with the feature [F] is F-structure. The FPR captures the view that F-structure is constrained by the location of main stress. Its ancestor is the principle in (62) first formulated in Chomsky (1971) and Jackendoff (1972):

- (62) **The focused constituent (or F-marked constituent) of the phrase must contain the intonational nucleus of that phrase.**

The coexistence of the NSR and the FPR in grammar sometimes leads to cases where the output of the NSR contradicts the output of the FPR. Zubizarreta shows that languages employ different strategies to resolve the conflict. German, English and French resolve the conflict by treating the defocalized ([-F]) constituents as metrically invisible for the NSR. In Spanish and Italian, it is done through the prosodically motivated movement (p-movement), whose purpose is to move the defocalized phrase away and leave the focused phrase in the position to receive the main sentential stress through the NSR.

I would like to suggest that there is another way in which the conflict could be resolved, and this is through the copy deletion at PF. One advantage of PF copy deletion over movement in this case would be that since copy deletion needs to happen in PF anyway, it comes for free. In particular, in case of a conflict between the NSR and FPR, the mechanism responsible for deciding which copies to pronounce and which copies to delete, which I call ‘copy deletion’ intervenes as a last resort, and marks the offending elements for deletion, which renders them and their projections invisible for the NSR.

3.3.1.2. Stress Assignment in SC

Let us consider how the copy deletion and the Nuclear Stress Rule might interact in SC to yield an output in which the subject is in the position in which it could be assigned the main sentential stress by the NSR in its linear ordering, but in a higher

position in syntax. I will adopt the same algorithms and conventions for the Nuclear Stress Rule as in Zubizarreta (1998).

Let us first consider the stress assignment situation in SC. First of all we have to determine whether in SC, both C-NSR and S-NSR apply or just one part of the rule. The relevant examples in German and English, which indicated that both S-NSR and C-NSR are active in these languages, were those in (43-44), repeated here:

(63)a. Es heisst, dass der/ein JUNGE kommt.

it is-said that the/a boy comes

b. #Es heisst, dass der/ein Junge KOMMT.

(64)a. Es heisst, dass ein Junge GETANZT hat.

it is-said that a boy danced has

b. Es heisst, dass ein JUNGE getanzt hat.

it is-said that a boy danced has

(65)a. TRESPASSERS will be prosecuted.

b. Trespassers will be PROSECUTED.

(66)a. MARY is dancing.

b. Mary is DANCING.

The German examples in (63) show that with an unaccusative verb, the stress can fall only on the subject. Based on this, Zubizarreta concludes that S-NSR applies in German. If only C-NSR applied in this case, the stress would fall always on the verb, contrary to the fact. Recall that based on the acceptability of both examples in (64) which contain an intransitive verb, Zubizarreta argues that in addition to S-NSR, C-NSR also applies in German. Based on the contrast in (63) with an unaccusative verb where the stress cannot

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UMI

- c. #MARIJA je zaspala.
 Marija is fallen-asleep
 ‘Marija fell asleep.’
- d. Marija je ZASPALA.
 Marija is fallen-asleep
- e. #DJECA pjevaju.
 kids sing
 ‘Kids are singing.’
- f. Djeca PJEVAJU.
 kids sing

As the data in (67) show, in sentences with unaccusative verbs containing only a verb as a subject, in an out-of-the-blue context, the stress falls unambiguously on the subject. As far as the German data are concerned, this was enough to conclude that S-NSR is active in German. However, one difference between German and SC is that in SC, the subject follows the verb, and depending on the structure of these sentences, the verb might c-command the subject here, so we would not be able to conclude whether the stress on the subject is due to S-NSR which is based on selectional ordering, or C-NSR, which is based on c-command ordering. As I will show below, there is a c-command relation between the verb and subject here, so these examples indicate nothing conclusive in this respect.

As far as the examples with intransitives are concerned, they are felicitous in an out-of-the-blue context, if the stress falls on the verb. This indicates that C-NSR, and not

¹⁴ Notice that speakers find the reverse order (i.e., VS) with intransitives infelicitous in an out-of-the-blue context, regardless of whether the stress falls on the subject or on the verb.

S-NSR is active in SC. The stress cannot fall here on the subject, which in German and English examples was an indication that S-NSR is active in these languages.

3.1.1.3. Deriving Word Orders in Transitive Sentences

Having determined the mechanism of stress assignment in SC, we are closer to being able to see how the order OVS in SC could be derived. Consider the OVS sentence in (69b), as an answer to the question in (69a)

(69)a. Ko hvata miša?

who catches mouse

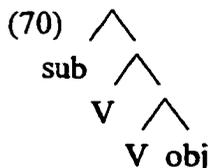
‘Who is catching a mouse?’

b. Miša hvata mačka.

mouse catches cat

‘A cat is catching a mouse.’

With Zubizarreta (1998), who follows Hale and Keyser (1993) with respect to this, I will assume the structures of VP given in (70).



This means that at the output of syntax, the structure of the sentence in (69b) is as in (71), where the syntactic movement of the verb, subject and object leaves a copy. I also indicate the value of feature F for each element.

(71) [AgrSP macka [TP macka hvata [AgrOP misa hvata [V1 macka hvata [V2 hvata misa.]]]]]
 +F +F -F -F -F +F -F

-F -F

If it is true that the assignment of sentential stress in some languages affects the decision of which copies to pronounce, then copies cannot be deleted before the NSR applies in these languages. This would mean that the NSR applies very early in the mapping of syntactic to phonological structure, and definitely before post-lexical phonology. This conclusion was also reached by Zubizarreta, who actually assumes that the NSR applies even before the spell-out. She was driven to this conclusion by the formulation of the NSR which is sensitive to the syntactic structure (c-command, and selectional ordering). However, I will assume that the NSR applies just after spell-out, at the same time that copy deletion applies. It has been shown in the literature that at this stretch of derivation PF rules can be sensitive to syntactic structure (see, for example, Chen 1990, who shows the relevance of the distinction between arguments and adjuncts with respect to creation of tone groups in Xiamen, and Fuzhou, a northern Min dialect of Chinese, and Truckenbrodt 1998).

Suppose now that SC is a language in which stress assignment can affect a decision about which copy of an element to pronounce. Then, given the formulation of the NSR adopted here, the following situation might obtain for the sentence in (69), repeated here as (72).

(72) [AgrSP *macka* [TP *macka* *hvata* [AgrOP *misa* *hvata* [V1 *macka* *hvata* [V2
 +F +F -F -F -F +F -F
 hvata *misa*.]]]]]
 -F -F

If we adopt Zubizarreta's (1998) formulation of the NSR, the first metrical sisters the algorithm considers are the subject *macka* and the whole TP. The subject is +F, while

the TP dominates elements with contradictory specifications for the feature [F]. So, according to Zubizarreta (1998), TP is unspecified for the feature [F]. Recall that the FPR applies only in cases where the metrical sisters under consideration have contradictory specifications with respect to the feature [F], i.e., only if one of them is [+F], and the other one is [-F]. So, in this case the FPR does not apply. The C-NSR applies and assigns prominence to TP. The next pair of metrical sisters the NSR and the FPR consider are *macka* in the SpecTP and T'. Since *macka* is [+F] and T' [F], the FPR does not apply. The NSR applies and assigns prominence to T'. The algorithm keeps reapplying until it reaches the point when it considers the sisters *macka* in VP₁ and V₁'. *Macka* is [+F], while V₁' is [-F], since it dominates all [-F] elements. The FPR, which says that of the two sisters, one [+F] and the other one [-F], the [+F] constituent is more prominent than [-F], assigns prominence to *macka*. The C-NSR, however, wants to assign prominence to the [-F] V', the outcome of which would clash with the FPR. Now, if V' could be rendered invisible to the NSR, the outcome would be compatible with the FPR. In fact, the NSR would not be able to apply in that case, since as mentioned above, the NSR applies only in cases where both sisters are metrically visible. Only the FPR would apply and assign the main prominence to *macka*. I suggest that the conflict is resolved by the intervention of copy deletion, a PF mechanism operating on non-trivial chains created by syntactic movement by deleting copies. In particular, copy deletion deletes the copies of the verb, and object dominated by V'. With these copies deleted, V' is rendered invisible to the NSR. Since of the two sister constituents under consideration, one is metrically invisible to the NSR, the NSR does not apply (recall that the NSR applies only in case both sisters are metrically visible). The FPR applies and assigns prominence to *macka*.

So, the output of the NSR and the FPR has decided that this copy of the subject be pronounced, while the others have to be deleted. As mentioned above, empirical evidence points to the tendency to pronounce the highest copies of moved elements in most cases. However, there is also a growing evidence showing that lower copies of moved elements can be pronounced, in cases where pronouncing the highest copies would lead to a PF violation. If the structure of the sentence in (69) is as in (72), this would be an example of pronouncing a lower copy dictated by PF requirements. What about the leftover copies of the verb and the object? Under the theory of copy pronunciation we are pursuing here, in case there are no PF requirements dictating it otherwise, the highest copies will be pronounced. In the case of object, there is no choice, since there is only one copy left, and this one will be pronounced. As far as the leftover copies of the verb are concerned, pronouncing the highest copy of the verb here would put the verb into the initial position in the sentence. As we will see below, however, for independent reasons, the verb cannot be pronounced in this case in the initial position. Since this copy of the verb then cannot be pronounced (for the reason we will discuss below), the only copy left to be pronounced is the one following the object. The result is the OVS order.

All other word orders involving partitioning of the sentence into focus and presupposition could be derived this way. Consider next the order SOV, where the verb is focused, while the subject and the object are presupposed, as in (73b) which is an answer to the question in (73a).

(73)a. Šta radi mačka mišu?

what does cat to-mouse

‘What is the cat doing to the mouse?’

b. **Mačka miša HVATA.**

cat mouse catches

‘The cat is catching the mouse.’

At the output of syntax, the structure of (73b) might look as follows:

(74) [AgrSP mačka [TP mačka hvata [AgrOP miša hvata [V1 mačka hvata [V2
 -F -F +F -F +F -F -F
 hvata miša.]]]]]
 +F -F

When the NSR and the FPR apply, the first metrical sisters they find are *mačka* and TP.

Since one metrical sister is not [+F] nor is the other [-F] (*mačka* is [-F], and TP is unspecified for this feature since it dominates both [+F] and [-F] material), the structural description for the FPR is not met, so this rule will not apply. The C-NSR, however, does, and it assigns the prominence to TP. The algorithm keeps reapplying just as in the case of (72), until it gets to the point when it considers the verb and the object in VP₂.

The verb being [+F] and the object being [-F], the FPR applies and wants to assign prominence to the verb. The NSR, however, wants to assign prominence to the object.

The conflict is resolved by copy deletion, which is called upon as the last resort to mark the object for deletion, rendering its projection invisible to the NSR.

(75)[AgrSP mačka [TP mačka ~~hvata~~ [AgrOP miša ~~hvata~~ [V1 mačka ~~hvata~~ [V2
 -F -F +F -F +F -F -F
 hvata ~~miša~~.]]]]]
 +F -F

Copy deletion deletes the lowest copy of the object. This leaves the verb in the position to receive the main stress by the FPR. Recall that the NSR will not apply here since by deleting the relevant copy of the object, this sister is rendered invisible to the NSR, and

the NSR applies only in case both sisters are metrically visible. So, the output of the stress assignment process has decided that the lowest copy of the object be deleted, and the lowest copy of the verb be pronounced with the rest of the copies of the verb deleted. The only leftover copy of the object will be pronounced. As far as the copies of the subject are concerned, since there are no PF requirements dictating otherwise, the highest copy will be pronounced, giving the SOV order.

Let us now consider the OSV order. The input structure for the OSV order looks a little bit different though. Suppose that in SC, just like in Finnish, AgrSP can function as a position capable of hosting not only the subject, but any XP which can act as a topic. In order to implement this formally, I will assume that AgrSP is the place where EPP is checked, just as Holmberg and Nikkane (to appear) assume, but in addition to the EPP feature, its head may be taken from the lexicon with a topic feature. If AgrS is taken from the lexicon without a topic feature, and only with an EPP feature, then it will attract the closest element to check EPP, which is the subject in TP. (I will assume, however, that EPP could be checked by any XP, and not only the subject). If, on the other hand, AgrS is supplied with a topic feature in addition to an EPP feature, the topic feature will have to be checked too. This feature can be checked only by an element that has a matching feature. Naturally, only [-F] elements could be supplied with a topic feature. In order for this feature to be checked, AgrS will attract the relevant XP with a matching feature. In addition to checking the topic feature, this XP can also check the EPP feature of AgrS, so no other phrase need move for this purpose, or last resort will be violated. Suppose that in the input structure to PF for the OSV order, the object occupies this position, (since it was supplied with a topic feature, it was attracted by AgrS to check it, and in addition it also

checked the EPP feature of AgrS), while the subject raises as far as TP, as illustrated in (76).

- (76) [AgrSP miša [TP mačka hvata [AgrOP miša hvata [V1 mačka hvata [V2
 -F -F +F -F +F -F -F
 hvata miša.]]]]]
 +F -F

The NSR and the FPR apply in the same manner as in (72) and (74). At the output of the stress assignment process, the lowest copy of the object is deleted, while the lowest copy of the verb is decided to be pronounced. The rest of the copies of the verb will be deleted. As far as the copies of the subject are concerned, since there are no PF requirements dictating otherwise, the highest one will be pronounced. This will also be the case with the leftover copies of the object; the highest one is pronounced. The resulting order is OSV, as illustrated in (77).

- (77) [AgrSP miša [TP mačka ~~hvata~~ [AgrOP miša ~~hvata~~ [V1 ~~mačka~~ ~~hvata~~ [V2
 -F -F +F -F +F -F -F
 hvata ~~miša~~.]]]]]
 +F -F

Let us briefly check the derivation for the SVO order, where the object is focused and the verb and the subject are presupposed. Consider the input structure to PF for such a sentence:

- (78) [AgrSP mačka [TP mačka hvata [AgrOP miša hvata [V1 mačka hvata [V2
 -F -F -F +F -F -F -F
 hvata miša.]]]]]
 -F +F

The output of the FPR and the NSR will choose the lowest copy of the object to be pronounced, while the other copy of the object will be deleted. The highest copy of the

verb and the subject will be pronounced, since there is no PF requirement barring this, resulting in the SVO order, as shown in (79).

- (79) [AgrSP mačka [TP mačka hvata [AgrOP miša hvata [V1 mačka hvata [V2 hvata miša.]]]]]
 -F -F -F +F -F -F -F
 -F +F

There is a strong piece of evidence showing that we are really pronouncing the lowest copy of the object here. As it was shown above, and repeated here as (80), object shift over a quantifier is possible in SC.

- (80) Petar je oborio studente sve.

Petar is failed students all

‘Petar failed all students.’

However, this sentence cannot be used as an answer to the question in (81).

- (81) Koga je Petar oborio?

who is Petar failed

‘Who did Petar fail?’

A good answer to this question is given in (82), which on the surface does not involve object shift.

- (82) Petar je oborio sve studente.

Petar is failed all students

‘Petar failed all students.’

The contrast between (80) and (82), when used in the context of the question in (81) follows naturally from the system advanced here. Consider the input structures for the sentence with quantifier float, where both the quantifier and the object NP are required to be focused:

- (83) [AgrSP Petar je [TP Petar je oborio [AgrOP studente oborio [V1 Petar oborio
 -F -F -F +F -F -F -F
 [V2 oborio sve studente.]]]]]
 -F +F +F

After the NSR and FPR apply here, they assign the main stress on the lowest copy of the object NP, so this copy is chosen to be pronounced, as illustrated in (84).

- (84) [AgrSP Petar je [TP **Petar** je oborio [AgrOP **studente** oborio [V1 **Petar** **oborio**
 -F -F -F +F -F -F -F
 [V2 **oborio** sve studente.]]]]]
 -F +F +F

If the object NP is focused, i.e., if it is [+F], as is the case in (84), there is no way for it to be pronounced in its shifted position in AgrOP, its lowest copy simply must be pronounced. The object shifted copy is pronounced only if the quantifier *sve* is focused, but the object NP is not, as illustrated in (85).

- (85) [AgrSP Petar je [TP **Petar** je oborio [AgrOP studente **oborio** [V1 Petar **oborio**
 -F -F -F +F -F -F -F
 [V2 **oborio** sve **studente**.]]]]
 -F +F -F

The resulting sentence in (85) is the one in (80) with the object shift over the quantifier.

All the word orders in transitive sentences with the appropriate relation of focus and prosody are then derived. Given the input structures to PF for the OVS and SOV orders, if the highest copies were pronounced, these word orders could not be derived, since the result would uniformly be SVO or OSV. However, the stress assignment process has crucially decided that a lower copy of the subject and the verb should be pronounced, giving rise to OVS and SOV respectively. As far as SVO is derived, the stress assignment process has decided to pronounce the lowest copy of the object, but the SVO order would have been derived even if the highest copies of the elements were pronounced. The same holds of OSV.

Let us now turn to the derivation of word orders in intransitives and unaccusatives.

3.4. Word Orders with Intransitives and Unaccusatives

As mentioned before, in an intransitive sentence which is partitioned into focus and presupposition, whenever the subject is presupposed and the verb is focussed, the word order is SV. In the light of analysis proposed for the transitive sentences, this is expected. The canonical word order for intransitive sentences is SV. The structure for the sentence in (86b), as an answer to the question in (86a) is given in (86c)

(86)a. Šta Petar radi?

what Petar does

‘What is Petar doing?’

b. Petar trči.

Petar runs

Petar is running.’

c. [AgrSP Petar [TP Petar trči [VP Petar trči]]]
 -F -F +F -F +F

The NSR and FPR will assign the main prominence to the lowest copy of the verb, so this copy of the verb is chosen to be pronounced, while all the other ones are deleted. As far as the copies of the subject are concerned, the highest one can be pronounced, so it will be. The resulting order is SV, as expected.

In cases where the verb is presupposed and the subject is focussed, as in (87b), which is an answer to the question in (87a), the word order expressing neutral focus

reading is VS. The structure of the sentence in (87b) that PF is dealing with is given in (87c).

(87)a. Ko trči?

b. Trči Petar.

runs Petar

Petar is running.'

c. $[\text{AgrSP Petar } [\text{TP Petar trči } [\text{VP Petar trči}]]]$
 +F +F -F +F -F

The first metrical sisters that the FPR and the NSR are considering are *Petar* in AgrSP and TP. Since *Petar* is [+F], and TP is unspecified for [F] (by virtue of dominating both [+F] and [-F] material), the FPR does not apply. The NSR does and it assigns the prominence to TP. The FPR and the NSR keep reapplying until they reach the metrical sisters of *Petar* within VP and V' dominating the verb *trči*. Since *Petar* is [+F] and the verb is [-F], the FPR will assign prominence to *Petar*. The NSR, however, wants to assign prominence to the verb. There is, therefore, a conflict between the NSR and the FPR, which could be resolved, if the lowest copy of the verb is deleted, thus rendering the projection of V' invisible to the NSR. After deleting the verb, the NSR does not apply, since it applies only in case when both sisters are metrically visible. The main prominence is assigned correctly to the subject by the FPR. The output of the stress assignment process chooses this copy of the subject to be pronounced, which means that all others are deleted. As far as copies of the verb are concerned, the highest one is pronounced, and the result is VS order. (As we will see below, there is no violation of V-initial constraint in this case).

In the intransitive sentences, the crucial role played by the stress assigning mechanism is visible in VS order. Given the input structure to PF, this order could not be derived if the stress assigning mechanism did not choose the lower copy of the subject to be pronounced. Pronouncing the highest copies in the input structure given above would yield the SV order only.

A similar situation holds of unaccusative sentences. As mentioned above, if the whole sentence containing an unaccusative verb is focus, the neutral focus reading is obtained if the word order is VS, as shown in (88b), which is an answer to the question in (88a).

(88)a. Sta se desava?

what SE happening

‘What happened?’

b. Stizu novi gosti.

arrive new guests

‘New guests are arriving.’

This is predicted if in the syntactic structure, the argument of an unaccusative starts as a complement of the verb, as standardly assumed. The input structure to PF for the sentence in (88b) may then look as follows:

(89) [AgrSP novi gosti [TP novi gosti stizu [VP stizu novi gosti]]]]
 +F +F +F +F +F

The NSR and FPR will want to assign the main stress of the sentence to the lowest copy of the subject, so this copy should be pronounced, and all others deleted. As far as the verb is concerned, its highest copy is chosen to be pronounced, since there are no PF

requirements dictating otherwise (as in the case of intransitives, we will see that there is no violation of V-initial constraint in this case either). The resulting order is correctly VS.

If the same sentence is partitioned into focus and presupposition, the VS order obtains if the subject is focused and the verb is presupposed, while the SV order is obtained if the situation is reversed. Consider (90b), as an answer to the question in (90a), which requires the subject in (90b) to be focused and the verb presupposed:

(90)a. Ko stiže?

who arrives

‘Who is arriving?’

b. Stižu novi gosti.

arriving new guests

‘New guests are arriving.’

The input structure to PF would look as follows:

(91) [AgrSP novi gosti [TP novi gosti stizu [VP stizu novi gosti]]]]
 +F +F -F -F +F

After the NSR and FPR apply, the lowest copy of the subject is chosen to be pronounced, and all others are deleted. As for the verb, the highest copy is pronounced, yielding the order VS.

In case the verb is focused and the subject is presupposed as in (92), the input structure looks as in (93):

(92)a. Sta je sa novim gostima?

what is with new guests

‘What is happening with new guests?’

ambivalent behavior with respect to the standard tests used to check the underlying order of the objects of a ditransitive verb. First consider the sentences in (95):

- (95)a. Vesna je pokazala Ivanu i Marku jedan drugog.
 Vesna is showed Ivan and Marko-dat each other-acc
 ‘Vesna showed Ivan and Marko each other.’
- b. Vesna je pokazala Ivana i Marka jedan drugom.
 Vesna is showed Ivan and Marko-acc each other-dat
 ‘Vesna showed Ivan and Marko to each other.’

In (95a), the dative object precedes the accusative object. The dative object NP *Ivanu i Marku* binds the reciprocal, which is the accusative object. In (95b), the order of the objects is reversed, the accusative precedes the dative, and it binds it. So, the facts concerning the reciprocal binding show that whichever object precedes the other, it can bind it.

A similar conclusion is obtained by considering the data where the reciprocal is embedded into the relevant object NP. Consider (96).

- (96)a. Vesna je pokazala Ivanu i Marku prijatelje jedan drugog.
 Vesna is showed Ivan and Marko-dat friends-acc each other-gen
 ‘Vesna showed Ivan and Marko each other’s friends.’
- b. Vesna je pokazala Ivana i Marka prijateljima jedan drugom.
 Vesna is showed Ivan and Marko-acc friends-dat each other-gen
 ‘Vesna showed Ivan and Marko to each other’s friends.’

The data in (96a-b) show that whichever object precedes, it can bind a reciprocal in the other.

Bound variable test behaves in the same way in this respect, as (97a-b) show.

(97)a. Vesna je pokazala svakom studentu njegovog profesora.

Vesna is shown every student-dat his professor-acc

‘Vesna showed every student his professor.’

b. Vesna je pokazala svakog studenta njegovom profesoru.

Vesna is shown every student-acc his professor-dat

‘Vesna showed every student to his professor.’

In (97a) the quantified dative object precedes the accusative object containing a pronoun variable. The variable is bound by the quantified object. In (97b), the quantified accusative object precedes the dative object containing the variable, and the binding of the variable obtains.

The data in (95)-(97) are clear; the object that precedes can bind the object that follows. What is less clear, however, is the reversed binding situation. Here, contradictory results obtain. Consider the facts in (98).

(98)a. ?*Vesna je pokazala jedan drugog Ivanu i Marku.

Vesna is showed each other-acc Ivan and Marko-dat

‘Vesna showed Ivan and Marko each other.’

b. Vesna je pokazala jedan drugom Ivana i Marka.

Vesna is showed each other-dat Ivan and Marko-acc

‘Vesna showed Ivan and Marko to each other.’

(98a) shows that if the dative follows and the accusative object precedes, the dative object cannot bind the accusative reciprocal. On the other hand, if the accusative object

follows and the dative precedes, the accusative object can bind the dative reciprocal. The same situation obtains if the reciprocal is embedded into the relevant object:

(99)a. ?*Vesna je pokazala prijatelje jedan drugog Ivanu i Marku.

Vesna is showed friends-acc each other-gen Ivan and Marko-dat

‘Vesna showed Ivan and Marko each other’s friends.’

b. Vesna je pokazala prijateljima jedan drugog Ivana i Marka.

Vesna is showed friends-dat each other-gen Ivan and Marko-acc

‘Vesna showed Ivan and Marko to each other’s friends.’

The dative object which follows the accusative object cannot bind a reciprocal in the accusative object. On the other hand, the accusative object which follows the dative object can bind a reciprocal in the dative object.

When it comes to bound variable pronouns, however, a different situation is obtained. Consider (100).

(100)a. ?Vesna je pokazala njegovog profesora svakom studentu.

Vesna is shown his professor-acc every student-dat

‘Vesna showed every student his professor.’

b. ?*Vesna je pokazala njegovom profesoru svakog studenta.

Vesna is shown his professor-dat every student-acc

‘Vesna showed every student to his professor.’

The contrast between (100a) and (100b) shows that it is the dative object that can bind a pronoun variable in the accusative object when it follows it. The accusative object which follows the dative object cannot bind a pronoun variable in the dative object. If binding is obtained under c-command, as standardly assumed, the data in (99)-(100) exhibit a

paradox. The Condition A facts require the accusative object to be higher than the dative object, while the bound variable facts require the dative object to be higher than the accusative object. It is not clear at the present moment why Condition A and variable binding tests produce different results with respect to reversed binding in ditransitive verb structures. As such, the binding facts cannot tell us conclusively what the structure of the ditransitive verb constructions in SC should be, i.e., whether the accusative is higher than the dative, or vice versa, or whether both structures are available in SC.

The data concerning superiority facts in (101-102) indicate that the latter possibility might be true of SC.

(101)a. Koga li kome Marija pokazuje?

whom-acc Q-part. whom-dat Marija shows

‘Who is Marija showing to whom?’

b. Kome li koga Marija pokazuje.

whom-dat li whom-acc Marija shows

‘Who is Marija showing to whom?’

(102)a. Koga kome Petar tvrdi da Marija pokazuje.

whom-acc are whom-dat Petar claims that Marija shows

‘Who does Petar claim that Marija is showing to whom?’

b. Kome koga Petar tvrdi da Marija pokazuje.

whom-dat whom-acc Petar claims that Marija shows

‘Who does Petar claim that Marija is showing to whom?’

The data in (101)-(102) are multiple *wh*-fronting constructions. In both (101) and (102), the fronted *wh*-phrases are the accusative and dative objects. In both (101) and (102),

either *wh*-phrase can appear first in the linear order. As pointed out by Rudin (1988), Bošković (1997b, 1998a, 1999) among others, the *wh*-phrase that appears first in the linear order is the one that has moved first. This means that in both (101) and (102), either phrase can move first, and there are no Superiority violations. As shown by Bošković (1997b, 1998a, 1999), and discussed in more detail in Chapter 4, SC shows ambivalent behavior with respect to Superiority Condition, which has recently been argued to follow from Economy Conditions (Bošković 1997a, Cheng and Demirdache 1990, Kitahara 1997). In some contexts, no Superiority effects show up, but in others they do. The contexts in both (101) and (102) are some of those where Superiority effects are detected in SC. (101) is a root question with an overt complementizer (the question particle *li*). As Bošković (1997b, 1998a, 1999) shows, in this context, the higher *wh*-phrase has to move first, otherwise there is a violation of Superiority:

(103)a. Ko li koga voli?

who-nom li whom-dat loves

‘Who loves whom?’

b. ?*Koga li ko voli?

whom-dat li who-nom loves

In (103b), the object *wh*-phrase moves over the subject *wh*-phrase and the sentence is not good. In (101), however, there are no Superiority effects detected, no matter if the dative phrase moves first, or the accusative phrase does. The accusative and dative objects then seem to be on an equal foot with respect to Superiority.

(102) is a long distance question. Long distance questions are also contexts where Superiority effects are manifested in SC, as illustrated in (104).

(104)a. Ko koga Petar tvrdi da je udario.

who whom Petar claims that is hit

‘Who does Petar claim hit whom?’

b. ?*Koga ko Petar tvrdi da je udario?

whom who Petar claims that is hit

However, no Superiority effects are detected in (102) where either the accusative or dative *wh*-phrase moves first. This suggests that neither of the phrases is higher than the other. If both dative-accusative and accusative-dative orders are available in SC, then the fact that the dative and accusative phrase are on an equal foot with respect to Superiority does not come as a surprise.

Another piece of evidence that leads to the same conclusion concerns multiple *wh*-fronting and contexts where superiority effects are not manifested. As Bošković (1997b, 1998a, 1999) shows, no Superiority is manifested in root questions with a null C:

(105)a. Ko koga voli?

who whom loves

‘Who loves whom?’

b. Koga ko voli?

whom whom loves

In (105b), the object *wh*-phrase moves over the subject *wh*-phrase without causing any Superiority violation. Bošković (1998c) points out, however, that there is a difference in the interpretation of these two sentences. While the sentence in (105a) allows both pair-list and single answer readings, this ambiguity is lost in the sentence in (105b), where the

object *wh*-phrase moves over the subject *wh*-phrase. (106b) allows only single answer readings. Consider now the following facts involving an accusative and dative *wh*-phrase:

(106)a. Koga kome Marija pokazuje.

whom-acc whom-dat Marija shows

‘Who is Marija showing to whom?’

b. Kome koga Marija pokazuje.

whom-dat whom-acc Marija shows

‘Who is Marija showing to whom?’

In both of these sentences, pair-list readings are available, suggesting that in both cases c-command relations between the phrases are preserved as in their original positions, i.e., in (106a) *koga* ‘whom-acc’ starts out higher than *kome* ‘whom-dat’, while in (106b) *kome* ‘whom-dat’ start higher than *koga* ‘whom-acc’. The following data offer more support to this end. There is a way in SC to enforce pair-list readings in multiple questions. This is by using the particle *sve* ‘all’, as in the following example:

(107) Ko sve koga voli?

who all whom loves

‘Who loves whom?’

When *sve* is used, the only answers possible to such a question are pair-list answers.

Now, if *sve* is used in a sentence where the lower *wh*-phrase moves over the higher *wh*-phrase, the sentence is degraded, as in (108).

(108)a. ?* Koga sve ko voli?

whom-acc all who-nom loves

‘Who loves whom?’

b. ?* Koga ko sve voli?

whom-acc who-nom all loves

If Bošković (1998c) is right that in sentences in which lower *wh*-phrase moves over the higher *wh*-phrase pair-list readings are not available, then the oddness of sentences in (108) is accounted for straightforwardly. *Sve* is infelicitous in such sentences because it enforces pair-list readings, but the sentences in question do not allow such readings.

Notice now that *sve* is felicitous in both sentences in (109).

(109)a. Koga sve kome Marija pokazuje?

whom-acc all whom-dat Marija shows

‘Who is Marija showing to whom?’

b. Kome sve koga Marija pokazuje?

whom-dat all whom-acc Marija shows

‘Who is Marija showing to whom?’

If both the structure where *koga* starts higher than *kome*, and the structure where *kome* starts higher than *koga* are available in SC, the felicity of *sve* in both sentences in (109) does not come as a surprise. In neither sentences in (109) does the lower *wh*-phrase cross over the higher *wh*-phrase, unlike the sentences in (109) where the use of *sve* is infelicitous.

Based on these data, I will conclude that both ACC DAT and DAT ACC orders are available in SC. Miyagawa (1997) has reached a similar conclusion for Japanese. This means that the backward binding problem discussed above does not stem purely from structural reasons.¹⁵

¹⁵ If both structures are allowed, we face a question concerning the order of DAT and ACC clitics discussed in the previous chapter. If it is possible to have both ACC DAT and DAT ACC orders, as I have just

Having in mind that both objects can raise in overt syntax, as was shown in section X, let us now examine how different word orders are derived in ditransitive sentences. First of all, all possible permutations of verb and its arguments in ditransitive sentences are allowed in SC. However, just as in case of intransitive, unaccusative and transitive sentences, these word orders have different prosodic and information properties and are not all used in the same context.

The neutral word order that can appear in an out-of-the-blue context, for example, as an answer to the question in (110a) is either S V ACC DAT in (110b) or S V DAT ACC in (110c).

(110)a. Šta se dešava?

what SE happening

‘What is happening?’

b. Ivana predstavlja Petra Mariji.

Ivana introduces Petar-acc Marija-dat

‘Ivana is introducing Petar to Marija.’

c. Ivana predstavlja Mariji Petra.

Ivana introduces Marija-dat Petar-acc

‘Ivana introduces Petar to Marija.’

Given that both objects can undergo movement to AgrOPs, input structures for these sentences might look as either (111a) or (111b).

argued, the question is why the order of clitics must be DAT ACC, as shown in Chapter 2. An answer to this question could be that of these two orders, one order is actually a double object construction, and the other one is comparable to English ‘to-dative’ construction, but in SC it has a null preposition. Since clitics in SC cannot occur with prepositions, they can opt only for the double object construction, which would be the one having DAT ACC order on the surface.

- (111)a. [AgrSP Ivana [TP Ivana predstavlja [AgrOP Petra predstavlja [AgrOP Mariji
 +F +F +F +F +F +F
 [V1 Ivana predstavlja [V2 Petra predstavlja Mariji.]]]]]]
 +F +F +F +F +F
- b. [AgrSP Ivana [TP Ivana predstavlja [AgrOP Mariji predstavlja [AgrOP Petra
 +F +F +F +F +F +F
 [V1 Ivana predstavlja [V2 Mariji predstavlja Petra.]]]]]]
 +F +F +F +F +F

After the FPR and NSR apply, they assign stress to the lowest copy of DAT in (111a), and the lowest copy of ACC in (111b), so these copies of DAT in (111a) and ACC in (111b) are chosen to be pronounced, with the rest of the copies of these elements deleted. As far as the copies of other elements are concerned, since there are no PF requirements dictating otherwise, the highest copies of these elements will be pronounced, with the rest of the copies deleted, resulting in the S V DAT ACC or S V ACC DAT orders, as illustrated in (112).

- (112)a. [AgrSP Ivana [TP ~~Ivana~~ predstavlja [AgrOP Mariji ~~predstavlja~~ [AgrOP ~~Petra~~
 +F +F +F +F +F +F
 [V1 ~~Ivana~~ predstavlja [V2 ~~Mariji~~ predstavlja ~~Petra~~]]]]]]
 +F +F +F +F +F
- b. [AgrSP Ivana [TP ~~Ivana~~ predstavlja [AgrOP ~~Petra~~ ~~predstavlja~~ [AgrOP ~~Mariji~~
 +F +F +F +F +F +F
 [V1 ~~Ivana~~ predstavlja [V2 ~~Petra~~ predstavlja ~~Mariji~~.]]]]]]
 +F +F +F +F +F

This word order can also be used as neutral focus answers to the questions requiring DAT and ACC to be in focus, as illustrated in (113) and (114) for ACC and DAT respectively.

- (113)a. Koga Ivana predstavlja Petru?
 whom-acc Ivana introduces Petar-dat
 ‘Who is Ivana introducing to Petar?’
- b. Ivana predstavlja Petru Mariju.

Ivana introduces Petar-dat Mariju-acc

'Ivana is introducing Marija to Petar.'

(114)a. Kome Ivana predstavlja Petra?

whom-dat Ivana introduces Petar-acc

'Who is Ivana introducing Petar to?'

b. Ivana predstavlja Petra Mariji.

Ivana introduces Petar-acc Marija-dat

'Ivana is introducing Petar to Marija.'

The input structures to PF for the sentences in (113b) and (114b) are given in (115a) and (115b) respectively.

(115)a. [AgrSP Ivana [TP Ivana predstavlja [AgrOP Petra predstavlja [AgrOP Mariji
 -F -F -F -F -F +F
 [V1 Ivana predstavlja [V2 Petra predstavlja Mariji.]]]]]

 -F -F -F -F +F

b. [AgrSP Ivana [TP Ivana predstavlja [AgrOP Mariji predstavlja [AgrOP Petra
 -F -F -F -F -F +F
 [V1 Ivana predstavlja [V2 Mariji predstavlja Petra.]]]]]

 -F -F -F -F +F

When copy deletion takes place, the NSR and the FPR have decided that the lowest copy of DAT in (115a) and ACC in (115b) are assigned the main stress, so this copy should be pronounced, and the rest of the copies deleted. As far as the other elements in the sentence are concerned, since there is no PF requirement dictating it otherwise, the highest copies of these elements will be pronounced, resulting in S V DO IO and S V IO DO orders, as illustrated in (116).

(116)a. [AgrSP Ivana [TP ~~Ivana~~ predstavlja [AgrOP Petra ~~predstavlja~~ [AgrOP Mariji
 -F -F -F -F -F +F
 [V1 ~~Ivana~~ predstavlja [V2 ~~Petra~~ predstavlja Mariji.]]]]]

 -F -F -F -F +F

- b. [AgrSP Ivana [TP Ivana predstavlja [AgrOP Mariji predstavlja [AgrOP Petra
 -F -F -F -F -F +F
 [V1 Ivana predstavlja [V2 Mariji predstavlja Petra.]]]]]

These same word orders could also be used in a context where everything but a subject is focused, i.e., when what traditionally constitutes a VP is a focus. So, (113b) and (114) could also be used as answers to the question *Šta Ivana radi?* ‘What is Ivana doing?’

The rest of the word orders in ditransitive sentences cannot be used in out-of-the-blue contexts. Some of them could be used as neutral answers to the questions requiring partitioning of the sentence into focus and presupposition, with the presupposed material preceding the focused material, the most embedded element of which receives nuclear stress assigned by the NSR and FPR. Some of the word orders involve focus movement to be discussed in the next chapter, and cannot be used in neutral focus contexts at all.

The IO S V DO and DO S V IO word orders could be used as neutral focus answers to a question requiring the partitioning of the answer into focus and presupposition. In particular, these word orders could be used to answer the same question in (113a) and (114a) for which S V IO DO and S V IO DO could be used. This is illustrated in (117) and (118).

(117)a. Koga Ivan predstavlja Petru?

whom-acc Ivan introduces Petar-dat

‘Who is Ivan introducing to Petar?’

b. Petru Ivan predstavlja Mariju.

Petar-dat Ivan introduces Marija-acc

‘Ivan is introducing Marija to Petar.’

(118)a. Kome Ivan predstavlja Petra?

whom-dat Ivan introduces Petar-acc

‘Who is Ivan introducing Petar to?’

b. Petra Ivan predstavlja Mariji.

Petar-acc Ivan introduces Marija-dat

‘Ivan is introducing Petar to Marija.’

If, as in Finnish, AgrSP need not host only subjects in SC, but can also host other elements capable of serving as topics, then it is not surprising that these sentences can be used as answers to the given questions. The input structure to PF of the sentences in (117b) and (118b) might look as follows:

(119)a. [AgrSP Petra [TP Ivan predstavlja [AgrOP Petra predstavlja [AgrOP Mariji
 -F -F -F -F -F +F
 [V1 Ivan predstavlja [V2 Petra predstavlja Mariji.]]]]]
 -F -F -F -F -F

b. [AgrSP Mariji [TP Ivan predstavlja [AgrOP Mariji predstavlja [AgrOP Petra
 -F -F -F -F -F +F
 [V1 Ivan predstavlja [V2 Mariji predstavlja Petra.]]]]]
 -F -F -F -F +F

When the NSR and FPR apply, they assign stress to the lowest copy of *Mariji* in (119a) and *Petra* in (119b), so these copies will be pronounced, while the rest of the copies of these elements are deleted. Since there are no PF requirements imposed on other elements in the sentence, copy deletion will leave the highest copies of these elements to be pronounced, and delete the rest of the copies. The resulting order is DO S V IO for (119a) and IO S V DO for (119b), as illustrated in (120).

(120)a. [AgrSP Petra [TP Ivan predstavlja [AgrOP ~~Petra~~ predstavlja [AgrOP Mariji
 -F -F -F -F -F +F
 [V1 ~~Ivan~~ predstavlja [V2 ~~Petra~~ predstavlja Mariji.]]]]]
 -F -F -F -F +F

lead me to conclude that the verb is not actually in T and that the structures assumed so far are not complete. To account for these data, I would like to suggest that there is a maximal projection between T and AgrOPs which is the final landing site of the verb and which can host topic elements. (For more evidence for existence of a maximal projection between AgrOP and TP which hosts the verb, see Bošković (forthcoming)). I will label this phrase PredP and will leave a precise description of its nature open, just noting that this phrase marks the edge of the extended VP domain, in the same way as AgrSP marks the edge of the IP domain. I will assume for now that apart from hosting the verb, this phrase can also host topic elements (in Chapter 4, I show, however, that topic elements are actually not in this phrase but in a phrase between this one and TP), just as I have claimed it is possible for AgrSP to do this in SC, and as Holmberg and Nikkane (to appear) have claimed, it is possible in Finnish. This means that possible structures of an answer to the questions in (113a) and (114) could be all of these in (123).

- (123)a. [AgrSP Ivan [TP Ivan [PredP Ivan predstavlja [AgrOP Petra predstavlja [AgrOP Mariji predstavlja [V1 Ivan predstavlja [V2 Petra predstavlja Mariji.]]]]]]
 -F -F -F -F -F
 +F -F -F -F -F -F +F
- b. [AgrSP Ivan [TP Ivan [PredP Ivan predstavlja [AgrOP Mariji predstavlja [AgrOP Petra predstavlja [V1 Ivan predstavlja [V2 Mariji predstavlja Petra.]]]]]]
 -F -F -F -F -F -F
 +F -F -F -F -F -F +F
- c. [AgrSP Petra [TP Ivan [PredP Ivan predstavlja [AgrOP Petra predstavlja [AgrOP Mariji predstavlja [V1 Ivan predstavlja [V2 Petra predstavlja Mariji.]]]]]]
 -F -F -F -F -F -F
 +F -F -F -F -F -F
- d. [AgrSP Mariji [TP Ivan [PredP Ivan predstavlja [AgrOP Mariji predstavlja [AgrOP Petra predstavlja [V1 Ivan predstavlja [V2 Mariji predstavlja Petra.]]]]]]
 -F -F -F -F -F
 -F +F -F -F -F -F

predstavlja Petra.]]]]]
 -F +F

e. [AgrSP Ivan [TP Ivan [PredP -Petra predstavlja [AgrOP Petra predstavlja
 -F -F -F -F -F -F
 [AgrOP Mariji predstavlja [V1 Ivan predstavlja [V2 Petra predstavlja
 +F -F -F -F -F -F
 Mariji.]]]]]
 +F

f. [AgrSP Ivan [TP Ivan [PredP Mariji predstavlja [AgrOP Mariji predstavlja
 -F -F -F -F -F -F
 [AgrOP Petra predstavlja [V1 Ivan predstavlja [V2 Mariji predstavlja Petra.]]]]]
 +F -F -F -F -F -F +F

No other word order could be used to answer the questions in (113a) and (114a). This is a welcome result for the system advanced here. In this system, no other order is permitted because there is no movement of the verb and its arguments other than to the functional projections above VP in overt syntax. The resulting syntactic structure coupled with a particular theory of copy deletion under which there is only preference for pronunciation of the highest copies (recall that the highest copies are pronounced in those cases where PF does not dictate otherwise), gives only S V IO DO, IO S V DO, and S IO V DO orders for the question in (113a) as well as S V DO IO, DO S V IO and S DO V IO orders for the question in (114a), and no other orders. The other word orders which are logically possible but cannot occur in answers to the questions in (113a) and (114a) are given in (124) for ACC as focus, and in (125) for DAT as focus.

(124)a. # Petru predstavlja Ivan Mariju.

 Petar-dat introduces Ivan Marija-acc

b. # Predstavlja Ivan Petru Mariju.

 introduces Ivan Petar-dat Marija-acc

- c. # Predstavlja Petru Ivan Mariju.
introduces Petar-dat Ivan Marija-acc

(125)a. # Mariju predstavlja Ivan Petru.

Marija-acc introduces Ivan Petar-dat

- b. # Predstavlja Ivan Mariju Petru.
introduces Ivan Marija-acc Petar-dat

- c. # Predstavlja Mariju Ivan Petru.
introduces Marija-acc Ivan Petar-dat

All of these sentences are grammatical sentences in SC, but they are not felicitous in the context of the questions in (113a) and (114a). (124a) and (124a) could be used in the context requiring non-neutral contrastive focus on the verb, involving movement of a verb to a focus position, and will be discussed in the next chapter.

The fact that both of these sentences in which a presupposed object and the verb precede the the presupposed subject cannot be answers to the questions in (113a) and (114a) presents another piece of evidence that the subject cannot stay in situ in SC, but it must raise overtly to a position high enough to precede the verb after the verb raises. If the verb raises to a head of a phrase between AgrOPs and TP, which I have called PredP, then the subject must be raising at least as high as the specifier of this XP. In all cases discussed with neutral focus reading, the presupposed subject must precede the verb, and this is only possible if the subject raises higher than the verb.

The word orders in (124b-125b) and (124c-125c) cannot be used in neutral focus contexts at all. They could be used in contexts requiring emphatic or contrastive focus on

the verb. The question why it is not possible for these word orders to serve as answers to the given questions will be addressed below in section 3.7.

Let us now see how the proposed structure fares against the word orders used in neutral focus answers to questions requiring the subject to be in focus. The question requiring the subject to be a neutral focus in the answer is given in (126a), while possible answers are given in (126b-e).

- (126)a. Ko daje Mariji knjigu? / Ko daje knjigu Mariji?
 who gives Marija-dat book-acc who gives book-acc Marija-dat
 ‘Who is giving a book to Marija?’
- b. Mariji knjigu daje Petar.
 Marija-dat book-acc gives Petar-nom
 ‘Petar is giving the book to Marija.’
- c. Knjigu Mariji daje Petar.
 book-acc Marija-dat gives Petar-nom
- d. Mariji daje knjigu Petar.
 Marija-dat gives book-acc Petar
- e. Knjigu daje Mariji Petar.
 book-acc gives Marija-dat Petar-nom

The possible input structures to PF for the answers to (126a) are the following:

- (127)a. [AgrSP Petar [TP Petar [PredP Petar daje [AgrOP knjigu daje [AgrOP
 +F +F +F -F -F -F
 Mariji daje [V1 Petar daje [V2 knjigu daje Mariji.]]]]]
 -F -F +F -F -F -F -F
- b. [AgrSP Petar [TP Petar [PredP Petar daje [AgrOP Mariji daje
 +F +F +F -F -F -F
 [AgrOP knjigu daje [V1 Petar daje [V2 Mariji daje knjigu.]]]]]

- F -F +F -F -F -F -F
- c. [AgrSP knjigu [TP Petar [PredP Petar daje [AgrOP knjigu daje
-F +F +F -F -F -F
[AgrOP Mariji daje [V1 Petar daje [V2 knjigu daje Mariji.]]]]]]
-F -F +F -F -F -F -F
- d. [AgrSP Mariji [TP Petar [PredP Petar daje [AgrOP Mariji
-F +F +F -F -F
daje [AgrOP knjigu daje [V1 Petar daje [V2 Mariji daje knjigu.]]]]]]
-F -F -F +F -F -F -F -F
- e. [AgrSP Petar [TP Petar [PredP knjigu daje [AgrOP knjigu daje
+F +F -F -F -F -F
[AgrOP Mariji daje [V1 Petar daje [V2 knjigu daje Mariji.]]]]]]
-F -F +F -F -F -F -F
- f. [AgrSP Petar [TP Petar [PredP Mariji daje [AgrOP Mariji daje
+F +F -F -F -F -F
[AgrOP knjigu daje [V1 Petar daje [V2 Mariji daje knjigu.]]]]]]
-F -F +F -F -F -F -F

When the NSR and the FPR apply to these structures, a conflict between them arises at the point when the algorithms encounter the lowest copy of the subject in V1 and its sister. The lowest copy of the subject is [+F], while its sister is [-F]. The conflict can be resolved by deleting the elements dominated by the sister node of the lowest copy of the subject. Recall that in this way, the sister is rendered invisible to the NSR, barring the NSR to apply in this case. The FPR applies alone and assigns the main prominence to the lowest copy of the subject. So, the main stress assignment process decides that this copy of the subject should be pronounced, with the rest of the copies of the subject deleted. As far as the rest of the copies of the other elements in the sentence are concerned, since there are no PF requirements dictating otherwise, the highest copies will be pronounced. The results of copy deletion are given in (128).

- (128)a. [AgrSP ~~Petar~~ [TP ~~Petar~~ [PredP ~~Petar~~ daje [AgrOP knjigu daje [AgrOP
Mariji daje [V1 Petar daje [V2 knjigu daje Mariji.]]]]]]

- b. [AgrSP **Petar** [TP **Petar** [PredP **Petar** daje [AgrOP **Mariji** daje [AgrOP **knjigu** daje [V1 **Petar** daje [V2 **Mariji** daje **knjigu**.]]]]]]
- c. [AgrSP **knjigu** [TP **Petar** [PredP **Petar** daje [AgrOP **knjigu** daje [AgrOP **Mariji** daje [V1 **Petar** daje [V2 **knjigu** daje **Mariji**.]]]]]]
- d. [AgrSP **Mariji** [TP **Petar** [PredP **Petar** daje [AgrOP **Mariji** daje [AgrOP **knjigu** daje [V1 **Petar** daje [V2 **Mariji** daje **knjigu**.]]]]]]
- e. [AgrSP **Petar** [TP **Petar** [PredP **-knjigu** daje [AgrOP **knjigu** daje [AgrOP **Mariji** daje [V1 **Petar** daje [V2 **knjigu** daje **Mariji**.]]]]]]
- f. [AgrSP **Petar** [TP **Petar** [PredP **Mariji** daje [AgrOP **Mariji** daje [AgrOP **knjigu** daje [V1 **Petar** daje [V2 **Mariji** daje **knjigu**.]]]]]]

All orders in (128) are derived from these input structures coupled with the theory of copy deletion advanced here. Notice, however, that it is in principle possible to derive the V DO IO S and V IO DO S sequences as in (128a) and (128b). However, these orders will be filtered out by a remnant V2 constraint to be discussed below which requires non-V initial sequences in these cases.

The only neutral focus word orders left to check with ditransitive sentences are those where the verb is non-contrastive new information focus. Unfortunately, it is simply not possible to ask a question in SC which would elicit a response with a new information focus only on the verb in ditransitive sentences. The logically possible orders would be these in (129).

(129)a. Ivan je Mariji Petra predstavio.

Ivan is Marija-dat Petar-acc introduced

‘Ivan introduced Petar to Marija.’

b. Ivan je Petra Mariji predstavio.

Ivan is Petar-acc Marija-dat introduced

- c. Mariji je Ivan Petra predstavio.
Marija-dat is Ivan Petar-acc introduced
- d. Petra je Ivan Mariji predstavio.
Petar-acc is Ivan Marija-dat introduced
- e. Mariji je Petra Ivan predstavio.
Marija-dat is Petar-acc Ivan introduced
- f. Petra je Mariji Ivan predstavio.
Petar-acc is Marija-dat Ivan introduced

Of these, word orders in (129a-d) would be predicted by the structures assumed so far. The input structures to PF are those in (130a-e) without deletion marks. When copy deletion applies, the NSR and FPR decide that the lowest copy of the verb is to be pronounced, which means that the rest of the copies of the verb should be deleted. The highest copies of the other elements in the sentence will be pronounced, since there are no other PF requirements dictating otherwise. The results of copy deletion in these cases are given in (130).

- (130)a. [AgrSP Ivan je [TP Ivan [PredP Ivan predstavio [AgrOP Petra predstavio
-F -F -F +F -F +F
[AgrOP Mariji predstavio [V1 Ivan predstavio [V2 Petra predstavio
-F +F -F -F -F +F
Mariji.]]]]]
-F
- b. [AgrSP Ivan je [TP Ivan [PredP Ivan predstavio [AgrOP Mariji predstavio
-F -F -F +F -F +F
[AgrOP Petra predstavio [V1 Ivan predstavio [V2 Mariji predstavio Petra.]]]]]
-F +F -F -F -F +F -F
- c. [AgrSP Petra je [TP Ivan [PredP Ivan predstavio [AgrOP Petra predstavio
-F -F -F +F -F +F
[AgrOP Mariji predstavio [V1 Ivan predstavio [V2 Petra predstavio Mariji.]]]]]
-F +F -F -F -F +F -F

- d. [AgrSP Mariji je [TP Ivan [PredP Ivan predstavio [AgrOP Mariji
 -F -F -F +F -F
 predstavio [AgrOP Petra predstavio [V1 Ivan predstavio [V2 Mariji
 +F -F +F -F +F -F
 predstavio Petra.]]]]]
 +F -F
- e. [AgrSP Ivan je [TP Ivan [PredP Petra predstavio [AgrOP Petra predstavio
 -F -F -F +F -F +F
 [AgrOP Mariji predstavio [V1 Ivan predstavio [V2 Petra predstavio Mariji.]]]]]
 -F +F -F -F -F +F -F
- f. [AgrSP Ivan je [TP Ivan [PredP Mariji predstavio [AgrOP Mariji predstavio
 -F -F -F +F -F +F
 [AgrOP Petra predstavio [V1 Ivan predstavio [V2 Mariji predstavio Petra.]]]]]
 -F +F -F -F -F +F -F

So, the resulting word orders are S DO IO V, S IO DO V, IO S DO V and DO S IO V.

However, the IO DO S V order in (130g) and DO IO S V order in (130f) are not predicted by the system assumed so far. If it turns out that they are possible orders when the verb bears new information focus, then it would mean that when it hosts topic elements AgrSP could be recursive (since a clitic intervenes between the fronted objects, they cannot be in multiple specifiers). The structures for these word orders would then look as follows:

- (131)a. [AgrSP Petra je [AgrSP Mariji [TP Ivan [PredP Ivan predstavio [AgrOP Petra
 -F -F -F -F -F +F
 predstavio [AgrOP Mariji predstavio [V1 Ivan predstavio [V2 Petra predstavio
 -F -F -F -F -F
 Mariji.]]]]]
]]]]
- b. [AgrSP Mariji je [AgrSP Petra [TP Ivan [PredP Ivan predstavio [AgrOP Mariji
 -F -F -F -F -F +F
 predstavio [AgrOP Petra predstavio [V1 Ivan predstavio [V2 Mariji
 -F -F -F -F +F
 predstavio Petra.]]]]]
]]]]

There might be a way to devise a context question which is capable of eliciting the IO DO S V and DO IO S V orders to check whether the IO DO S and DO IO S orders are

available at all as defocalized phrase scrambling cases. The way would be to add an adjunct to a ditransitive sentence and devise a context in which the adverb would be a new information focus. The question would be as the one in (132).

(132) *Kada je Ivan predstavio Petra Mariji?*

when is Ivan introduced Petar-acc Marija-dat

‘When did Ivan introduce Petar to Marija?’

If the IO DO S V Adj and DO IO S V Adj orders in (133) are possible answers to this question, then we would be sure that IO DO S and DO IO S orders occur as defocalized phrase scrambling cases.

(133)a. *Petra je Mariji Ivan predstavio juče.*

Petar-acc is Marija-dat Ivan-nom introduced yesterday

‘Ivan introduced Petar to Marija yesterday.’

b. *Mariji je Petra Ivan predstavio juče.*

Marija-dat is Petar-acc Ivan-nom introduced yesterday

‘Ivan introduced Petar to Marija yesterday.’

Unfortunately, there is an interfering factor with the intended answers to the given question. The interfering factor has to do with the fact that if a full sentence is used as an answer to this question, there is too much old information repeated before the focused element (i.e., new information) comes into play. The sentence starts looking as though it does not have sufficient communicative value in which case most speakers tend to start stressing one of the elements, since stress brings in new information. This, as a result, produces a sentence that does not answer the given question. A natural answer to these questions would just be: *Juče*. ‘Yesterday.’

To sum up, we have seen that all the neutral focus word orders in unaccusative, intransitive, transitive and ditransitive sentences with correct prosodic properties could be derived in the same way. The neutral focus reading is obtained if the element in focus receives the main prominence of the sentence, assigned by the mechanism which applies to any sentences automatically (or in other words, default stress). I have adopted Zubizarreta's 1998 formulation of the default stress assigning mechanism, in the form of the NSR and FPR. The NSR and FPR assign the main prominence to the most embedded element of the sentence (with some exceptions, see discussion above with respect to German and English). Following Zubizarreta, I have argued that languages may differ with respect to whether all phonological material is treated as visible to the NSR. Recall that Zubizarreta has argued that in languages such as English or German, not all phonological material is visible to the NSR. In particular, defocalized elements are invisible to it. In languages such as Spanish or Italian, on the other hand, defocalized elements are treated as visible to the NSR. I have argued that SC falls in the latter group. Departing from Zubizarreta (1998), who into material which is invisible to the NSR includes traces of syntactic movement universally, I have assumed that syntactic movement does not leave traces but copies. Copies are identical to the moved elements, and just like the moved elements they have phonological information. So, in languages in which defocalized elements are treated as visible to the NSR, the null hypothesis is that copies of the moved defocalized elements are also visible to it. On the other hand, in languages in which defocalized material is invisible to the NSR, the copies of the moved defocalized elements should be invisible to it, as well.

As shown above, SC is a language in which defocalized material is visible to the NSR. If defocalized elements move, then their copies are also visible to it. As discussed above, the neutral focus reading of a sentence is obtained if the element in focus receives the main stress assigned by the NSR and FPR. Since a focused element in a sentence could be any element in the sentence, those focused elements whose original position is not the most embedded position in the sentence still have to wind up somehow as the most embedded elements in order to receive the main stress of the sentence. I have argued that this is achieved by combining the fact that verbs and their arguments in SC move to the functional projections in overt syntax, and a particular theory of pronunciation of copies at PF, under which pronouncing the highest copies is only a preference. More precisely, the highest copies will be pronounced in all cases where this would not cause a PF violation, or if there are no PF requirements dictating otherwise. I have argued that the main stress assignment by the NSR and FPR is one such requirement. In some cases, these PF mechanisms can demand pronunciation of a lower copy of the focused element, and deletion of all copies that follow that copy, which as a result will leave the element in focus as the most embedded element. The order of defocalized elements is relatively free, but they cannot leave their clause. I have argued that this relatively free order is due to the range of functional projections that can attract them.

3.6. Focus Projection

So far I have been concerned with sentences which have only one element as focus and the rest of the sentence as presupposed. However, this does not have to be the case.

Larger constituents may be focused. In case a larger constituent is focused, in order to have neutral focus reading, the most embedded element of that constituent has to receive the main stress of the sentence assigned by the NSR and FPR. This means that the presupposed elements in the sentence have to precede the elements contained in the focused constituent, leaving the most embedded element of the constituent in the position in which it can receive the main stress. For example, in (134b) as an answer to the question in (134a), the whole VP is focus.

(134)a. Šta Petar radi?

what Petar does

‘What is Petar doing?’

b. Petar jede čokoladu.

Petar eats chocolate

‘Petar is eating chocolate.’

This is in accordance with Chomsky (1971), Jackendoff (1972), Cinque (1993) and Reinhart’s observation, that whenever the main stress is assigned by the default mechanism (for them the NSR, but here the NSR and FPR), it is able to project to any constituent containing it. In (134), the stress falls on the object, as determined by the NSR

and FPR, and is able to project to the constituent consisting of the object and the verb, as well as on the whole sentence.¹⁶

3.7. No V-Initial Sequences: Remnant V 2

As I have hinted above, in certain cases, if a verb does not bear the main stress in the sentence, it is not felicitous in an initial position in a neutral focus sentences. The relevant cases are given in (135-136).

(135)a. Ko voli Mariju?

b. ??Voli Mariju Petar.

(136)a. Ko pokazuje slike Mariji?

b. ??Pokazuje slike Mariji Petar.

c. ??Pokazuje Mariji slike Petar.

Recall that the proposed syntactic structures and copy deletion would allow for such sentences, but they are still not acceptable for some reason. It is not that these word orders do not occur in SC. They do; they are felicitous in contexts where the verb has the main stress of the sentence, as for example, in (137), where the verb receives a heavy emphatic/contrastive stress.

(137)a. **Voli** Petar Mariju.

loves Petar-nom Marija-acc

‘Yes, Petar does love Marija.’

¹⁶ The only problem I have found with the default stress assigning mechanism in SC is that for some reason in the OVS sentences, where the verb and the subject are both focused, it is the subject that is chosen by the mechanism to bear the nuclear stress, instead of the verb.

On the other hand, I have shown that there are cases in which the verb which does not bear the main prominence in the sentence can be found in the initial position, as illustrated in (138b-139b).

(138)a. Ko pjeva? who sings

‘Who is singing?’

b. Pjeva Marko.

sings Marko

‘Marko is singing.’

(139)a. Ko je stigao? who is arrived

‘Who arrived?’

b. Stigao je Marko.

arrived is Marko

‘Marko arrived.’

By inspecting the sentences in (135b) and (136b) on one side and the sentences in (138b) and (139b) on the other side, the following generalization arises:

(140)The verb, which is not contrastively focused, is felicitous in a sentence initial position in SC only in cases where no other element can precede it. There is a preference for the verb to appear in a non-initial position of a sentence.

In (138) and (139), the lower copies of the subject must be pronounced, since it is these copies that get the main prominence by the NSR and FPR. Since the only other element in the sentence is the verb, then there is no way for the verb not to end up in the initial position.

In this respect, consider the examples in (141) and (142).

(141)a. *Sta rade?*

what do-3pl.

‘What are they doing?’

b. *Pokazuju Petru slike.*

show-3pl Petar-dat pictures

‘They are showing pictures to Petar.’

(142)a. *Sta pokazuju Petru?*

what show-3pl. Petar-dat

‘What are they showing to Petar?’

b. *??Pokazuju Petru slike.*

show-3pl Petar-dat pictures-acc

c. *Petru pokazuju slike.*

Petar-dat show-3pl pictures-dat

‘They are showing pictures to Petar.’

SC is a pro-drop language, so it allows sentences with no overt subject, as is the case with the examples in (141) and (142). The whole sentence in (141b), as a response to the question in (141a), is focus, and all elements in it are [+F]. We can see that the verb can appear in the initial position in this example. Given the system advanced here, this is expected. The verb can appear in the initial position in this example, because there is no way for any other element to precede it. Given the structures proposed above, the only way for an element to precede the verb in this example is for the objects to appear either in AgrSP or PredP. However, as shown above, objects can appear in these projections only if they are [-F], while both objects in (141) are [+F]. Therefore, they can move only

as far as AgrOPs in the structures proposed above. The verb, however, always moves higher than AgrOPs, and as a result, it has to precede objects in this example.

However, we can see that the verb is less felicitous in the sentence initial position in (142b). As the contrast between (b) and (c) shows, in the presence of a [-F] element in the sentence, the sentence is more felicitous, if the [-F] element precedes the verb. If there is a preference for the verb to appear in a non-initial position, and if a [-F] can precede the verb, then it will, as in this case.

Note, however, that not all elements need to precede the verb which is otherwise going to end up sentence initial, even if they can. Consider the following example:

(143)a. *Sta se desilo?*

what SE happened

‘What happened?’

- b. *Dobila sam maloprije novu poruku.*
 gotten am just-a-moment-ago new message
 ‘I got a new message just a moment ago.’

The example in (143b) is a felicitous answer to the question requiring the whole answer sentence to be focus. Notice, however, that although the adverb *maloprije* follows the verb in this case, it can also appear in the sentence initial position, as in (144).

(144) *Maloprije sam dobila novu poruku.*

just-a-moment-ago am gotten new message

Given the generalization in (140), this is unexpected. In this example, an element can obviously precede the verb, but if it does not, the sentence is still felicitous, contrary to

what is stated in (140). Observe, however, the contrast between (145b) and (145c), which are intended answers to the question in (145a).

(145)a. Sta si maloprije dobila?

b. ??Dobila sam maloprije novu poruku.

c. Maloprije sam dobila novu poruku.

In these examples, the focus is on the object, and both the verb and the adverb are presupposed. We can see that the verb is no longer felicitous in the sentence initial position. And, actually, in all examples above where the verb is not felicitous in the sentence initial position, a [-F] element is present. This means that it is not that any element that can precede the verb should do it. The non-initial V requirement arises whenever there is a [-F] element in the sentence. The generalization in (140) can thus be restated as follows:

(146) The verb cannot end up in the sentence initial position, if there is at least one [-F] element in the sentence. If the verb is not preceded by an overt element otherwise, the [-F] element will have to precede it.

The question is what is responsible for the fact that whenever there is a [-F] element in the sentence, the verb not bearing the main stress of the sentence is not felicitous sentence initially, even if there is an alternate structure which would allow it to be so. The behavior exhibited by the verb in this respect is reminiscent of the V2 requirement which held of Indo-European verbs (see Roberts 1996), and which has survived at least to some extent into a number of languages of today (for example, some Germanic languages). In these languages, verbs were/are required to appear in the second position. V 2 constraint also implies that verbs cannot appear in the sentence initial

position. I would like to suggest that the fact that the verb not bearing the main stress of the sentence cannot end up sentence initially in SC in the presence of a [-F] element in the sentence is a residue of the V2 requirement, still undergoing a change in SC. In all other types of sentences, this requirement is extinguished, but in this type of the sentence it is still lingering, while probably on the way out of the language completely.

3.8. Conclusion

In this chapter I have explored issues concerning word order in SC, a language that allows a great freedom of word order to the extent that almost any permutation of words in a sentence is possible. However, as we have seen, every word order has particular prosodic and information properties, which, as a result, renders a particular word order felicitous only in a particular context. The focus of this chapter was neutral focus sentences, i.e., sentences containing new information focus with the main stress perceived as neutral. We have seen that the main property of these sentences is that the focus element has to end up as the most embedded element of the sentence, in order to receive stress by a default stress assigning mechanism. I have adopted Zubizarreta's (1998) formulation of this mechanism, which consists of the interaction of two rules: the NSR and FPR. The presupposed elements in the sentence generally precede the element in focus, and their order is relatively free. Furthermore, they cannot leave their clause, so this type of 'scrambling' in SC is clause-bound. I have shown that in order to account for these facts, a joint work of syntax and phonology is necessary. In particular, syntax proposes certain structures to PF, and PF mechanisms interpret these structures. The PF

mechanisms relevant for accounting for the word order variation in SC are the stress assigning mechanism, as already mentioned, and apart from it, copy deletion. In this respect, I have argued for a particular theory of copy deletion at PF, which is capable of leaving lower copies of elements for pronunciation, and not only the highest ones. A lower copy can be pronounced in case this is required by a PF mechanism, or in case pronouncing the highest one would lead to a PF violation. I have argued that in SC, copy deletion is sensitive to the demands of the stress assigning mechanism. In other words, if the stress assigning mechanism demands pronunciation of a lower copy, copy deletion respects it. This view is, however, possible only in the system in which decisions regarding the pronunciation of copies are exclusively a proper of PF. Syntax creates chains and in cases where they consist of sequences of identical copies, PF decides which copy in a non trivial chain is pronounced.

If the analysis pursued in this chapter is correct, it provides an argument for the copy and deletion theory of movement. It also provides evidence that A-movement leaves copies, contrary to the recent proposals that it does not (see Lasnik 1999, Ausin 1999). Furthermore, it is compatible with the Single Output Syntax theory proposed by Bobaljik (1995, 1999), Brody (1995), Groat and O'Neil (1996), and Pesetsky (1997), among others. In this theory the architecture of grammar looks different from the standard Y model assumed by Chomsky (1995). In the Single Output Syntax theory, the syntax produces a single representation, which is interpreted, without any alteration, by both PF and LF components. Schematically, this model looks as in (147).

(147) |
PF LF

A fundamental difference between this model of grammar and the standard Y model lies in the timing of overt and covert movement. In the Y model, overt movement precedes covert movement, while in the Single Output Syntax model, there is no such timing. Rather, overt and covert movement are 'interleaved', and the difference between them is purely a phonological one. The difference is based on the idea that non-trivial chains may have either their heads or tails pronounced, as decided by PF. Pronouncing the head of the chain yields overt movement, while pronouncing the tail of the chain yields covert movement. In this respect, the evidence showing that lower copies of elements could be pronounced is a welcome result for this model. In this chapter, I have provided such evidence. However, although the system I have pursued in this chapter is compatible with the Single Output Syntax model, I will not adopt it. The reason is that in order to account for all the arbitrary word order variation among languages, in this system, the choice of which copy to pronounce will most likely have to be arbitrary. Here, however, I have argued for a more principled theory of copy pronunciation at PF, similar to the views adopted in Franks (1998) and Bošković (forthcoming), who argue that PF has a preference for the pronunciation of higher copies, and can pronounce lower copies only in cases this would lead to a PF violation. In their system, the pronunciation of the lower copies is therefore a last resort to save a PF output. The choice of which copy to pronounce is therefore not completely arbitrary. In my system, similarly, PF has a preference for pronunciation of the topmost copies, with lower copies being able to be pronounced only in cases where it is required by a PF mechanism. Crucially, it is not that any lower copy could be arbitrarily pronounced. However, if the choice of which copy is pronounced is made more principled, then most likely, one would not be able to account

for all the arbitrary cross-linguistic word order variation, without the presence of the LF cycle. In fact, as it will become apparent in the next chapter, certain facts concerning multiple *wh*-fronting are difficult to account for without assuming a covert cycle. Given this, I will assume that, as in the Y model, there can still be a point of spell-out, and a covert cycle after it, in which movement does not affect phonological features; in fact, the phonological features will not be present at this cycle at all, since they will be stripped by the spell-out.

Another consequence of the system adopted here is that what looks like scrambling does not involve any optional movement, a hallmark of problems that free word order raises for the minimalist framework. The only optionality allowed is the presence or an absence of a topic feature on the functional head attracting elements. All word orders are derived by movement of the verb and arguments to the functional projections above their VP and copy deletion at PF. Such a conclusion was forced on us once a close attention has been paid to the information and prosodic properties of the relevant sentences. Paying a close attention to these properties has also revealed that there are two kinds of ‘scrambling’ in SC with different properties: one that was explored in this chapter, which involves different ordering of defocalized phrases, and another kind involving reordering of focussed elements, which will be explored in the next chapter.

Thus, one should be careful when one talks about scrambling cross-linguistically, since it may involve different phenomena. For example, long-distance scrambling in Japanese, which was shown by Saito (1985, 1992) to be an instance of movement which does not take place for case reasons, nor does it create an operator-variable chain, and

which has to be obligatorily reconstructed at LF might as well be a different phenomenon from scrambling I have discussed in this chapter.

We have seen that the empirical evidence concerning defocalized phrase scrambling has forced us to adopt a richer clause structure than in Chomsky (1995), which admits only one functional projection above the verb phrase (TP). Although it departs from Chomsky's (1995) conception of clause structure, the system adopted here joins the side of theories showing that a richer clause structure is necessary, the extreme case being Cinque 1999. For SC, specifically, several proposals have been put forth that a richer structure is necessary: Bošković (forthcoming) has reached a similar conclusion about the clause structure as the one here by looking at the properties of second position cliticization, Boeckx and Stjepanović (to appear) while trying to account for certain connections between clitics and *wh*-words in SC and Bulgarian, Rivero (1994a,b) shows that clause structure of Balkan languages must contain a series of functional projections above VP, while Richards (1997) has also argued with respect to multiple *wh*-fronting in SC that there must be more maximal projections in SC than just one on top of the verb phrase.

To the extent that the analysis proposed in this chapter is on the right track, it makes certain predictions about cross-linguistic variation with respect to languages identifying focus through stress and not in some other manner, for example only through morphology. Languages could vary with respect to what happens in syntax or PF or both. SC is a type of a language that has overt movement to the functional projections in syntax, and the stress assigning mechanism interacts with copy deletion. That is, PF has a preference for pronunciation of the highest copies, but a lower copy could be

pronounced, if the stress assignment requires it. Copy deletion can also resolve the conflict between the NSR and FPR. In other languages, this does not have to be so. There might be languages in which copy deletion is more rigid in the sense that it requires the pronunciation of the highest copies and cannot interact with the stress assignment mechanism. Such language seems to be English. If copy deletion interacted with stress assignment in English, then, given what I have said for SC, sentences such as (148b) would be allowed as answers to the question in (148a), which requires the whole sentence to be new information (i.e., all elements should be [+F]).

(148)a. What happened?

b. Was arrested John.

Since copy deletion does not interact with stress assignment, how is the conflict between the NSR and FPR resolved in this case? According to Zubizarreta, languages such as English resolve the conflict by analyzing the defocalized material extrametrical to the NSR, i.e., the NSR is made to ignore it. Following Zubizarreta, I will assume that this is so.

Furthermore, if copy deletion interacts with stress assignment, it interacts with it in all aspects that it can. What I mean here is that there cannot be cases in which copy deletion would interact with stress assignment mechanism by virtue of choosing the lowest copy of a [+F] element to be pronounced, while the conflict between the NSR and FPR is resolved by defocalization of the type present in English, in cases where it is possible for it to be resolved by copy deletion. The reason for this is that copy deletion has to happen at PF anyway, i.e., it comes for free, while defocalizing in the way English does would be doing something extra in such languages (although this is not so obvious

from Zubizarreta's formulation of the stress assigning algorithm). If copy deletion interacts with stress assignment, then it should interact with it in all aspect it can, rather than introducing some other mechanism. The defocalization of the type in English will happen only as a last resort, i.e., if there is no other way to resolve the conflict between the NSR and FPR which would come for free. This is obvious in a language such as SC, in the cases where copy deletion cannot be employed to resolve the conflict between the NSR and FPR. Consider the sentence in (149b) as an answer to the questions in (149a).

(149)a. *Kakve djevojke voli?* / *Kakve voli djevojke?*

what girls likes-3sg./ what loves girls-3sg.

'What girls does he like?'

b. *Voli LIJEPE djevojke.*

loves beautiful girls

'He loves beautiful girls.'

In (149b), the stress falls on the adjective *lijepe* 'beautiful', while the noun *djevojke* 'girls' is destressed. The input structure for this sentence looks as (150).

(150) [AgrSP pro [TP pro [PredP voli [AgrOP [lijepe djevojke] voli [VP pro voli [voli
 -F -F -F +F -F -F -F -F -F
 [lijepe djevojke]]
 +F -F

The stress assigning algorithm will apply without any problem down the tree, assigning the relative prominence to the relevant sister node it considers at that point, until it reaches the most embedded copy of the object *lijepe djevojke* 'beautiful girls'. Here, one sister (*lijepe*) is [+F], while the other sister (*djevojke*) is [-F]. Note that these two sisters form the object NP. Now, the final result should be the sentence in (150), and not these in (151).

(151)a. * Voli djevojke lijepe.

girls loves beautiful

'He likes beautiful girls.'

b. * Djevojke voli lijepe.

girls loves beautiful

'He likes beautiful girls.'

The conflict between the FPR and NSR in this sentence is therefore not resolved by copy deletion, but with defocalization of the type in English. The reason for this might be that if the conflict is to be resolved by copy deletion in these sentences, deletion would have to affect a part of a constituent (the object NP), as illustrated in (146), and this type of 'scattered deletion' may not be allowed.

(152) [AgrSP pro [TP pro [PredP voli [AgrOP [~~lijepo~~ djevojke] voli [VP pro voli [voli
-F -F -F +F -F -F -F -F -F
[lijepo djevojke]]
+F -F

Since resolving the conflict between the two rules by copy deletion is not allowed, then the only way is to employ the English option, i.e., destress the discourse given *djevojke*.

The final structure looks as follows:

(153) [AgrSP pro [TP pro [PredP voli [AgrOP [~~lijepo djevojke~~] voli [VP pro voli [voli
-F -F -F +F -F -F -F -F -F
[lijepo djevojke]]
+F -F

Whether there are languages which resolve the conflict between the NSR and FPR neither through the copy deletion nor through defocalization of the type in English, but possibly through some other mechanism, for example through prosodic movement of Zubizarreta (1998), remains to be seen.

Chapter 4

Multiple *Wh*-fronting and Focus Movement

4.1. Introduction

In the previous chapter, we have seen that SC has a very free word order. We have seen, however, that a particular word order and considerations of main sentential stress give rise to particular information properties of a sentence, and that, as a result, the sentence is felicitous only in a particular context. The topic of the previous chapter was sentences with neutral focus structures, where the focused element ends up in the most embedded position in the sentence and bears the main stress of the sentence. All the presupposed elements precede this element and their order is relatively free, with a restriction that they cannot leave their clause. In cases where there was a mismatch between the syntactic position of an element and the position in which it is pronounced, the crucial role was played by copy deletion and considerations of stress assignment in determining which copy should be pronounced. This allowed for a pronunciation of a lower copy of an element, giving rise to the appearance that the movement to a particular functional projection is optional. The question now is whether there are movements in SC which do not appear to be optional, in the sense of the theory developed in Chapter 3.

SC does have such movements. One of them is second position cliticization, discussed in Chapter 2. We have seen that the distribution of clitics in a sentence is surprisingly very rigid compared to a great freedom of word order that SC has. We have also seen that this rigidity is due to a PF filter requiring clitics to be in the second position

of their intonational phrase. As a result, just those copies which will ensure the fulfillment of this PF requirement will be pronounced. Crucially, in syntax, clitics are not treated any different from other elements in the sentence. I have argued that they undergo movement to the functional projections, just as all other elements do. Thus, syntax just establishes a relationship between the relevant positions, creating a chain, and PF decides which copies in a non-trivial chain will be pronounced. The appearance of rigid ordering of clitics with respect to other elements in the sentence is due to PF.

Another kind of obligatory movement in SC appears to be multiple *wh*-fronting. In the majority of cases, *wh*-phrases in SC cannot stay in their in-situ position, and have to be in some position preceding the verb, as illustrated in (1).

- (1)a. * Ko kupuje šta gdje?
 who buys what where
- b. * Ko šta kupuje gdje?
 who what buys where
- c. Ko šta gdje kupuje?
 who what where buys

In order to see why these movements are obligatory in the sense of the system advanced here, it is first necessary to find out what the job of syntax is in deriving these sentences, and then see how phonology interprets the structures given by syntax.

With respect to the syntactic part in the derivation of these sentences, the question is where *wh*-phrases are moving and what the driving force of *wh*-movement is. Rudin (1988) argues that the *wh*-phrase which is the first in the linear order has moved to SpecCP, while others are adjoined to IP. The movement of the first *wh*-phrase can be

taken to be an instance of familiar *wh*-movement to SpecCP for checking of a *wh*-feature in C. As far as the second *wh*-phrase is concerned, however, a question immediately arises as to what the driving force of the movement of this *wh*-phrase is. This question becomes even more interesting in the light of Bošković's (1997b, 1998a, 1999) argument that in certain cases, even the first *wh*-phrase does not move to SpecCP overtly, although it is fronted. An attempt to find an answer to this question will reveal that there is a parallelism between *wh*-phrases and contrastively focused material with respect to the positions they occupy in the sentence. It will be shown that contrastively focused material can undergo overt movement to certain syntactic positions, as illustrated in (2).

(2)a. **Jovana** Petar savjetuje.

Jovan-acc Petar-nom advises

'Petar is advising Jovan.'

b. Petar **Jovana** savjetuje.

Petar-nom Jovan-acc advises

'Petar advises Jovan.'

In these sentences, the focused element is in an immediately preverbal or sentence initial position, it bears a heavy contrastive stress and it is necessarily the only focus of the sentence, i.e., the focus cannot project.

I will show that such sentences involve reordering of a different kind than the one discussed in the previous chapter. While in the previous chapter, word reordering stemmed from the combined effect of movement of elements into functional projections above VP, and a requirement on neutral focus to bear the main sentential stress assigned by a default stress rule, the kind of word reordering discussed in this chapter involves

movement of contrastively focused elements to a certain position in the sentence, where this focus is licensed.

I will show that multiple *wh*-fronting is a sub-case of this focus movement. In this sense, SC offers support to the often noted observation that that if a language marks focus syntactically, these positions also host *wh*-phrases. Some of the languages having this property are Somali, Chadic, Aghem, Basque, Hungarian, Omaha, Quetchua, Greek, and Finnish (see, among others, Horvath 1986, Rochemont 1986, and papers in Kiss 1995), and Romanian (Göbbel 1998).

Apart from being licensed syntactically, I will argue that contrastive focus (including multiple *wh*-fronting) is also licensed prosodically. In the light of the theory proposed in Chapter 3, this will help explain why *wh*-phrases and contrastively focused phrases have to be pronounced in the highest position in which they end up in syntax.

4.2. Multiple *Wh*-Fronting in SC

Rudin (1988) shows that there are two types of multiple *wh*-fronting languages. One type is the *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 (3a). The other type of languages is the *Serbo-Croatian type*, which includes languages such as SC, Czech, and Polish. 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 (3b).

(3)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 (4).

(4)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 (5).

- (5)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 (1997b, 1998a, 1999) 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 (5c-d), i.e. short distance null C matrix questions, and offers an analysis in which SC type languages never yield Superiority effects. However, Bošković (1997b, 1998a, 1999) shows that while it is true that in examples like (5c-d), 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 (6).

(6) 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:¹

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.’

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

¹ Bošković (1997b, 1998, 1999b) 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 does show that when this interfering factor in indirect questions is controlled for, true indirect questions in SC also exhibit Superiority effects.

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 (6b, 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 1997a, Cheng and Demirdache 1990, Kitahara 1997) which are presumably universal, and therefore not a plausible locus of cross-linguistic variation.

Superiority effects do not show up in SC short distance null C matrix questions (except in multiple sluicing contexts discussed below), while they do in a number of other contexts, including short distance overt C matrix questions, embedded contexts, and long-distance questions. Bošković (1997b, 1998, 1999b) offers an account of these facts. He bases his account on an interesting parallelism between SC and French. French

exhibits the same division between different types of questions 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 1997b 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.

If there is overt movement of *wh*-phrases, which is not driven by a [+*wh*] feature of C, the question is what it is driven by, and to what positions the phrases are actually moving. In the following sections I will show that multiple *wh*-fronting is a sub-case of focus movement affecting contrastively focused material. In order to show that, I will first discuss sentences involving focus movement of non-*wh* elements.

4.3. Focus Movement

4.3.1. Identificational vs. Information Focus

In the previous chapter I have argued that new information focus elements do not have any special status with respect to movement. The only movement in overt syntax they undergo is movement to the functional projections, as all other elements do. We have seen that new information focused elements have to end up in the final position of the sentence on the surface. In certain cases, new information focus elements end up in the sentence final position on the surface with a help of the interaction of copy deletion and the stress assignment mechanism. Crucially, they do not undergo any overt focus movement. In this section I will show, however, that SC does have focus movement. In particular, I will argue that focus movement is a property of contrastively focused elements.

First, let me discuss what I mean by contrastive focus. I will adopt Kiss's (1998) conception of contrastive focus (in her terminology identificational focus). Kiss (1998) argues that a distinction should be made between 'information' focus (sometimes also called presentational focus, or what I have called new information focus) and identificational focus (sometimes also called contrastive focus). She argues that these two types of focus have different syntactic and semantic properties.. Identificational focus has the following semantic-communicative function:

- (7) **The function of identificational focus: An identificational focus represents a subset of the set of contextually or situationally given elements for which the**

predicate phrase can potentially hold; it is identified as the exhaustive subset of this set for which the predicate phrase actually holds. (Kiss 1998, p. 245)

Identificational focus thus expresses exhaustive identification. Another characteristic of this focus is that it does not have to be present in every sentence. Furthermore, she argues that it can trigger syntactic reordering of elements in the sentence. New information focus, on the other hand, merely conveys nonpresupposed information, without expressing exhaustive identification, it is present in every sentence, and does not trigger any syntactic reordering. A difference between these two kinds of focus can be seen from their behavior in the test of exhaustive identification devised by Szabolcsi (1981). This test involves a pair of sentences in which the first sentence has a focus consisting of a coordinate DP, and the second sentence differs from the first one only in that one of the DPs in the coordinate phrase is dropped, as illustrated in (8-9) for Hungarian, from Kiss (1998):

(8)a. Mari **egy kalapot és egy kabátot** nézett ki magának.

Mary a hat-acc and a coat-acc picked out herself-to

‘It was a hat and a coat that Mary picked for herself.’

b. Mari **egy kalapot** nézett ki magának.

Mary a hat-acc picked out herself-to

‘It was a hat that Mary picked for herself.’

(9)a. Mari nézett ki magának **EGY KALAPOT ÉS EGY KABÁTOT**.

Mary picked out herself-to a hat-acc and a coat-acc

‘Mary picked a hat and a coat for herself.’

b. Mari nézett ki magának EGY KALAPOT.

Mary picked out herself-to a hat-acc

‘Mary picked a hat for herself.’

The examples in (8) involve focused elements in a preverbal position, while the examples in (9) involve postverbal focus. As Kiss (1998) points out, while the Hungarian sentence in (9b) is a logical consequence of the sentence in (9a), the sentence in (8b) is not a logical consequence of the sentence in (8a). The examples in (9) involve information focus, while the examples in (8) involve identificational focus. Kiss (1998) claims that English *it*-cleft sentences show the same behavior as Hungarian sentences in (8), as the translations of (8a-b) show, which leads her to conclude that focus in these sentences is identificational focus. Identificational focus introduces an operator which changes the truth conditions of the sentence, in this case, the logical consequences of the sentence, which is not the case with information focus. Identification focus is associated with a particular syntactic position, which in Hungarian is a preverbal position, while information focus is not.

Kiss (1998) also points out that there are two versions of identificational focus. Identificational focus can express contrast, which is identification with exclusion, or identification only. According to Kiss (1998), identificational focus expresses contrast, if it operates on a closed set of entities whose members are known to the participants of the discourse. In this case, the identification of a subset of a given set also identifies the contrasting complementary subset. However, identificational focus can also operate on an open set of entities, as in the Hungarian example in (10b), which is an answer to the question in (10a), from Kiss (1998).

(10)a. **Ki írta a Háború és békét?**

who wrote the War and Peace

'Who wrote *War and Peace*?'

b. **A Háború és békét Tolstoztoj írta.**

the War and Peace Tolstoy wrote

'It was Tolstoy who wrote *War and Peace*.'

(10b), as an answer to the question in (10a) does not presuppose a closed set of persons who might have written *War and Peace*. As a consequence, according to Kiss, the identification of the subset for which predicate holds does not result in the delineation of a complementary subset with clearly identifiable elements. In this case, identificational focus is not contrastive. Furthermore, Kiss (1998) shows that in Hungarian, identificational focus is associated with the preverbal position, and that this focus movement for identificationally focused elements is obligatory in Hungarian. She also reports several other languages, in which identificational focus undergoes movement to a certain syntactic position, these languages being Romanian, as discussed in Göbell (1998), Italian, Greek, discussed in Tsimpli (1994), Arabic, as discussed in Ouhalla (1994) and Finnish, discussed in Vilkuna (1995).

4.3.2. *Identificational Focus in SC*

Although, as I have argued in the previous chapter, information focus (in Kiss's terminology) does not undergo any overt focus movement, in this section I will show that

identification focus does, just as is the case with the languages mentioned in the previous section.

First of all, as it has been informally outlined in Chapter 3, both kinds of identificational focus in the sense of Kiss (1998) are manifested in SC. For example, the sentence in (11b) and (12b) is felicitous both if focus operates on a closed set of persons who Marija might love, in which case the complementary subset is also identified, or it can operate on an open set, in which case it involve merely exhaustive identification, without delineating the complementary set. In the former case, the context could be something like the one outlined in (11a), while in the latter case, the context could be a *wh*-question such as (12a). In the former case, identificational focus is contrastive, in the latter case it is pure identificational focus involving only exhaustive identification. The latter case is what I have referred to in Chapter 3 as a category of focus which is not merely new information, but is not contrastive focus either.

(11)a. Čula sam da Marija voli Igora.

heard-1sg.f. am that Marija loves Igor

‘I’ve heard that Marija loves Igor.’

b. Petra Marija voli.

Petar-acc Marija-nom loves

‘It is Petar that Marija loves.’

(12)a. Koga Marija voli?

whom Marija loves

‘Who does Marija love?’

b. **Petra Marija voli.**

Petar-acc Marija-nom loves

‘It is Petar that Marija loves.’

We can confirm that focus in cases such as these expresses exhaustive identification by applying Szabolcsi’s (1981) test illustrated in (8-9). Consider the pairs of SC sentences in (13) and (14).

(13)a. **Petra i Igora Marija voli.**

Petar-acc and Igor-acc Marija loves

‘It is Petar and Igor that Marija loves.’

b. **Petra Marija voli.**

Petar-acc Marija loves

‘It is Petar that Marija loves.’

(14)a. **Marija voli PETRA I IGORA.**

Marija loves Petar and Igor

‘Marija loves Petar and Igor.’

b. **Marija voli PETRA.**

Marija loves Petar

‘Marija loves Petar.’

In (13), the sentence in (b) is not a logical consequence of the sentence in (a). In (14), on the other hand, the sentence in (b) is a logical consequence of the sentence in (a). This means that in sentences in (13), focus expresses exhaustive identification, which is not the case with sentences in (14).

A similar situation also obtains in the pair of sentences in (15), which differ from the sentences in (13) in that the focused element is located in an immediately preverbal position, instead of in the sentence initial position as in (13).

(15)a. **Marija Petra i Igora voli.**

Marija Petar-acc and Igor-acc loves

‘It is Petar that Marija loves.’

b. **Marija Petra voli.**

Marija Petar-acc loves

‘It is Petar that Marija loves.’

These sentences could be used in the same contexts as the sentences in (13). Just as in sentences in (13), in these cases too, the sentence in (b) is not a logical consequence of the sentence in (a), indicating that exhaustive identification is at play.

It is obvious that in the examples (13) and (15), the focused elements do not occupy their base-generated position, which is one following the verb. This raises the question of what positions they actually occupy and how they get in these positions.

There is evidence showing that the relevant positions are located above TP and between TP and VP. First of all, note that in sentences in (13), the focused element precedes the subject, which according to the story in the previous chapter, is in AgrSP in this case. In (15), however, it follows the subject. This means that it follows AgrSP. So, there must be two positions capable of hosting an identificationally focused element. Consider now the following data:

(16)a. Oni **mudro Jovana** savjetuju.

they wisely Jovan advise

‘It is wise of them to advise Jovan.’

‘They advise Jovan in a wise manner.’

b. Oni **Jovana** mudro savjetuju.

they Jovan wisely advise

‘* It is wise of them the advise Jovan.’

‘They advise Jovan in a wise manner.’

(17)a. **Jovana** oni mudro savjetuju.

Jovan-acc they wisely advise

‘It is wise of them to advise Jovan.’

‘They advise Jovan in a wise manner.’

According to Jakendoff (1972) some adverbs, such as *wisely*, are ambiguous between a subject-oriented and manner reading. On the latter reading, the adverb is a VP adverb, while on the former, it has a sentential reading. The adverb *mudro* ‘wisely’ exhibits an interesting behavior in the sentences in (16-17). In (16a), where the adverb precedes the focused element, both the sentential and manner readings are available, as indicated by English translations of the sentence. In (16b), where the focused element follows the adverb, on the other hand, the only possible reading of the adverb is the manner reading. (17) shows that when the focused element is sentence initial, both readings are available. The question is how do we interpret these facts.

Stjepanović (1995) takes these facts to show that there are two focus positions where indentificationally focused material is licensed, by adopting Bošković’s (1995b,

1997a) argument based on Watanabe (1993) that sentential adverbs are adjoined to TP, while VP adverbs are adjoined to VP. The contrast in the interpretation possibilities of adverbs in these two sentences shows that one focus position is below TP. In cases where the sentential reading of the adverb is available, it means that the adverb can be adjoined to TP, while in cases where it is not available, it means that the adverb cannot be adjoined to TP and has to be lower in the structure. Since in (16b), where the focused phrase precedes the adverb, the sentential reading of the adverb is not available, it means that the adverb cannot be adjoined to TP, and it means that the focused phrase must be adjoined lower than TP, too. If the adverb precedes the focused phrase, as in (16a), both sentential and manner readings are available. This means that the adverb could be adjoined either to VP or TP, which means that the focused phrase is at least as high as the VP adjoined position. Stjepanović (1995) takes the VP adjoined position to be one position where identificational focus is licensed. (17) shows that when a focused phrase is sentence initial, both readings of the adverb are available, which means that the focused phrase is higher than TP. Stjepanović (1995) takes this position to be AgrSP position. Bošković (1997b, 1998a, 1999) notes, however, that if one takes the lower focus position to be an AgrOP adjoined position (assuming that VP adverbs can also adjoin to AgrOP), then the job of focus licensing in SC can be reduced to a single category, AgrSP and AgrOP being the same category in two different positions.

As mentioned, it has been argued in the literature (Bošković 1995b, 1997a, following Watanabe 1993) that on the sentential adverb reading, *wisely* is adjoined to TP, whereas on the manner reading, it is adjoined to VP (or AgrOP). We have seen in the previous chapter, however, that it was necessary to adopt a richer clause structure to

account for all the data presented there. In such a system, the TP and VP adjoined positions should not be taken as absolutely the only positions where the relevant adverbs could be licensed, because there may turn out to be a broader range of functional projections that can host them. One should keep in mind, however, the generalization that sentential adverbs are higher in the structure than VP adverbs, which was instantiated by placing sentential adverbs at the TP level, and VP adverbs at the VP level in the standard system. If it is true that a range of functional projections is capable of hosting sentential or VP adverbs, this means that the lowest position in which a sentential adverb can occur should be higher (or possibly equal to) the highest position in which a VP adverb can occur.

I have provided evidence in the previous chapter that main verbs in SC raise as high as PredP, a functional projection between TP and AgroP. Since a manner adverb can precede the main verb, then one has to assume that a manner adverb can be as high as PredP.

In the light of these new modifications, the data presented in (16-17) then show that the lower focus position in SC is at least as high as PredP, while the sentence initial position could still be AgrSP. But, this is not all, however. Consider the following examples:

(18) Marija Petru auto prodaje.

Marija Petar-dat car-acc sells

‘Marija sells a car to Petar.’

In this sentence the presupposed dative object *Petru* is in a position higher than the contrastively focused element. Now, there is evidence that the presupposed dative object *Petru* is in a position lower than TP:

(19)a. Marija mudro Petru auto prodaje.

Marija wisely Petar-dat car-acc sells

‘It is wise of Marija to sell Petar a car.’

‘Marija is selling a car to Petar in a wise manner.’

b Marija Petru mudro auto prodaje.

Marija Petar-dat wisely car-acc sells

‘* It is wise of Marija to sell Petar a car.’

‘Marija is selling a car to Petar in a wise manner.’

In (19a) the adverb *mudro* ‘wisely’ has both sentential and manner reading, while in (19b), it has only manner reading. Given the discussion above concerning the presence and absence of ambiguity with adverbs such as *wisely*, it can be concluded that the position of the dative object is lower than TP. This is consistent with the proposal from the previous chapter that presupposed elements in SC could be located within PredP. If it is true that the presupposed dative object in (18) is in PredP, then the focused accusative object must be in a position lower than PredP. This is, however, not possible since in this example the focused phrase is higher than the verb, and in the previous chapter, we have seen that the verb raises higher than AgrOPs, but lower than TP, to an XP which I have labeled as PredP (although it remains to be seen what the nature of this phrase really is). So, the focused object cannot be lower than PredP. Since there was no evidence to the contrary, in the previous chapter I assumed that this phrase also hosts topic elements.

Now we have evidence, however, that in order to accommodate focused elements, topics cannot share this projection with V. They should be in a phrase higher than PredP, but lower than TP. The focused element then can be in PredP. Consider, however, the following sentence:

(20) Marija auto Petru prodaje.

Marija car-acc Petar-dat sells

‘Marija sells a car to Petar.’

(20) shows that the focused object can also precede the presupposed dative object. That the focused object in such cases is below TP was shown in (16). So, if the system is what I have argued so far, then I would have to say that here the situation is reversed from that in (19), i.e., that PredP hosts topics, and another phrase above it hosts focus. However, recall that I have shown that there is another position in SC in which focus is licensed, which is in the domain of AgrSP. Recall, furthermore, that I have shown that AgrSP can also host topics, and that there was a reason to believe that AgrSP could be recursive. Now, if there is another such projection below TP, capable of hosting both topic and focus, then it would not be a surprise to find such data as (19) and (20). In these cases, both focus and topic can be in the same phrase. Since adverbs can intervene between the topic and focus, as in (19b), I will conclude that this phrase can also be recursive, just as there was a reason to believe that AgrSP is.²

At first, it might sound odd that both topics and foci are licensed in the same projection. However, the oddity disappears once we say that these projections are discourse-related, capable of hosting discourse related elements such as topics and foci,

² What traditionally are called VP adverbs then could adjoin as high as these phrases, but crucially the highest position they can be found in is lower than the position in which sentential adverbs are found.

irrespective of their conflicting nature. Uriagereka (1988, 1995) has shown a necessity for such a projection in Western Romance, which he labeled as FP, and which is capable of hosting topic, focus, emphasis, contrast, etc., all of which, according to him, have an aspect in common – the point of view of speaker or some other subject. (see also Boeckx and Stjepanović 1999) who propose similarly that there must be such projections hosting both topic and focus, based on a connection between *wh*-phrases and clitics in SC and Bulgarian). In SC, AgrSP can function as FP in this sense, and, as we have just seen, there may be another FP in a sentence (possibly recursive, just as AgrSP), which is below TP and above the projection hosting the verb, which I have called PredP.³ Focus positions in SC are, therefore, in these projections.

³ When a sentence contains clitics, the focused or *wh*-phrase can occur after clitics:

- (i) Koji prijatelji su mu sta dali?
 which friends are him-dat what-acc given
 ‘Which friends gave what to him?’

Now, if, as I have argued, *wh*-phrases and focused elements move to projections which are higher than the projection hosting the verb, which is PredP, then it is not clear at first sight why they can be found following the AgrOPs hosting clitics. Since sentences such as (ii) are bad, there cannot be any focus projection capable of hosting a *wh*-phrase or a focused element following PredP hosting the verb, which is higher than AgrOPs.

- (ii) *Koji prijatelji su Petru dao sta?
 which friends are Petar-dat what-acc
 ‘Who gave what to Petar?’

This means there cannot be any focus projection lower than AgrOPs. The question is how do we explain the facts in (i) then. Note that although the *wh*/focused elements cannot follow the verb here either:

- (iii) *Koji prijatelji su mu dali sta?
 which friends are him-dat given where
 ‘Which friends gave what to him?’

In order to account for facts in (i), first recall that SC clitics have a PF requirement to be in the second position of their intonational phrase. Bošković (forthcoming) argues that a potential violation of these requirements could be avoided if there is another copy of the relevant element which could be pronounced in a position that would not cause such a violation. In this case if the *wh*/focused element and the verb were pronounced in the focus projections above PredP, then it would cause the second position effect. However, since there are other copies of the *wh*/focus element and the verb that could be pronounced in AgrDOP, then in order to avoid the second position effect, one of these copies of each element is pronounced. According to Franks (1998), on which Bošković bases his proposal, it is the next copy down in the chain that is pronounced. So, the next copy down of *koga* as well as of the verb is in AgrDOP following the clitic

4.3.3. Multiple *Wh*-Fronting: A Subcase of Focus Movement

We have seen above that SC is a type of multiple *wh*-fronting language in which the second phrase does not undergo overt *wh*-movement to SpecCP, although it fronts overtly. We have also seen that based on certain facts about Superiority in SC, Bošković (1997b, 1998a, 1999) has argued that in null C short-distance matrix questions, even the first *wh*-phrase need not move to SpecCP, although it fronts overtly. The question is where they move and why.

Note now that positions in which *wh*-phrases could be found are exactly those where identificationally focused elements are found, as illustrated in (21).⁴

- (21)a. Ko mudro koga savjetuje?
 who wisely whom advises
 ‘?? Who is it wise of to advise whom?’
- b. Ko koga mudro savjetuje?
 who whom wisely advises
 ‘*Who is it wise of to advise whom?’
 ‘Who advises whom in a wise manner?’
- c. Koga ko mudro savjetuje?
 whom who wisely advises
 ‘?? Who is it wise of to advise whom?’
 ‘Who advises whom in a wise manner?’

in AgrIOP.

⁴ Although better than (21b), (21a) and (21c) are somewhat degraded on the sentential adverb reading. This is due to the general incompatibility of sentential adverbs in questions. *Who wisely advises whom* is also somewhat degraded on the sentential reading of *wisely*.

In (21), exactly the same judgments obtain with respect to the interpretation of the adverb *mudro* 'wisely', as in the examples involving focused phrases. This means that *wh*-phrases could be occupying the same positions that identificationally focused phrases do. This is not implausible. Cross-linguistically it is well attested that interrogative *wh*-phrases share the syntactic behavior of focused phrases. In languages which focus phrases move to a certain position, *wh*-phrases also move there. As shown in a number of articles in Kiss (1995), these languages are typologically as different as Somali, Chadic, Basque, Aghem, Hungarian, Haida, Omaha, Quetchua, Korean, Greek or Finnish. Stepanov (1998) argues that a similar situation obtains in Russian. Kidwai (1998) claims that the same situation holds in Hindi-Urdu. (22-23) shows examples from Hungarian and Aghem from Horvath (1986), which are all languages where focused and *wh*-phrases occupy the same syntactic positions.

(22)a. Attila melyik lanyt szereti legjobban? (Hungarian)

Attila which girl-acc. likes best

b. *Attila szereti legjobban melyik lanyt

Attila felt a foldrengestol

Attila feared the earthquake-from.

'Attila was afraid of the earthquake'

b. Attila A FOLDRENGESTOL felt.

Attila THE EARTHQUAKE-FROM feared

c. *Attila felt a FOLDRENGESTOL.

(23) a. a mo nin ndugho (Aghem)

DS P₂ run who

- b. *ndugho mo nin (no)
 who P₂ run FOC
- c. fil a mo zi AN SOM be-ko
 friends SM P₂ eat in farm fufu
 ‘Friends eat fufu IN THE FARM.
- d. *fil a mo zi be-ko AN SOM.

The overwhelming cross-linguistic evidence in this respect has lead Horvath (1986) to express this *wh*-phrase – focus phrase connection in a form of a universal principle, given in (24).

- (24) The syntactic position(s) in which non-echo interrogative *wh*-phrases can appear in a language L will be identical to or be a proper subset of the position in which Focus constituents can appear in the language L.

The correspondence between Focus movement and the overt movement of *wh*-phrases leads Horvath to conclude that *wh*-phrases are inherently focused. A similar conclusion was reached by Rochemont (1986). If this is true, then we can assume that *wh*-phrases necessarily have a focus feature which is licensed in the positions in which non-*wh* focused phrases are licensed, i.e., in ‘FPs’ in Uriagereka’s sense, one being AgrSP and another between TP and PredP.

Having determined what is responsible for displacement of *wh*-phrases in syntax, a question is now why cannot they be pronounced in their in-situ position⁵, given

⁵ As discussed in Bošković (1999b), there are actually two exceptions to the obligatoriness of *wh*-phrase fronting in SC. One exception concerns D-linked *wh*-phrases, as illustrated in (i).

(i) Ko je kupio koju knjigu?
 who is bought which book
 ‘Who bought which book?’

On the other hand, D-linked *wh*-phrases can move, as illustrated in (ii).

(ii) Ko je koju knjigu kupio?

the system presented in the previous chapter. This system allowed for the pronunciation of the lowest copy of an element as determined by the default stress assigning mechanism.

The fact about the identificational focus elements and *wh*-words is that they carry the so called emphatic or contrastive stress.⁶ I will assume with Zubizarreta (1998) that in cases of emphatic or contrastive stress, it is not the Nuclear stress rule that assigns it, but a different mechanism. Suppose now that this stress is associated with the focus feature of the relevant projection, which attracts focused elements and *wh*-phrases and which they have to check in order to be licensed. Then, the stress will fall on this copy of the moved element, and this copy will necessarily have to be pronounced.

To sum up, I have shown that identification focus is licensed in particular syntactic positions in SC. *Wh*-phrases also occupy these positions in the overt syntax.

who is which book bought

'Who bought which book?'

Bošković (1999b) argues that the movement of D-linked *wh*-phrases is not obligatory, because they cannot undergo focus movement. Following Pesetsky (1987), he assumes that the range of reference with D-linked *wh*-phrases is discourse given. As a result, such phrases cannot be inherently focused, and therefore should not be subject to focus movement. Bošković (1999b) points out further that the fact that they can sometimes undergo movement to a preverbal position, as in (ii) must be due to some other mechanism, and not focus movement. If, as I have argued, there are projections in SC hosting topics, then it would not be surprise that in (ii), the D-linked *wh*-phrase is undergoing topic movement. Since the range of reference of a D-linked phrase is presupposed, it would not be a surprise that they can serve as topics. So, if they are given a topic feature, they could move to the relevant projections, if not, they stay in-situ.

Bošković (1999b) also notes that a non-D-linked *wh*-phrase does not have to be fronted in SC if it is phonologically identical to another fronted *wh*-phrase, as illustrated in (ii).

(iii) *Šta uslovljava sta?*

what conditions what

Bošković (1999b) accounts for this by a PF filter disallowing the occurrence of two identical *wh*-phrases in a sentence, which results in a pronunciation of a lower copy of one of them. So, in this case, the lower *sta* has actually moved to a preverbal position. PF, however, decides to pronounce the lower copy, as illustrated in (i).

(i) *Šta šta uslovljava šta.*

what what conditions what

⁶ Lehiste and Ivić (1986) show that *wh*-words in SC are pronounced with the F_0 peak characteristic of emphasis. While characterizing the intonation of *wh*-questions, they say the following: 'In those questions that began with *kada* ['when'], the fundamental frequency applied to the initial interrogative adverb was higher than the average first F_0 peak; this is characteristic of emphasis (see below).' (p. 207). This presents another piece of evidence for *wh*-phrase and identificationally focused phrase connection.

Syntax proposes such structures to PF, and PF decides that the highest copies of these elements should be pronounced, since in PF, the focus feature in the heads of projections to which identification focus elements and *wh*-phrases move is associated with prominence that results in the so called emphatic or contrastive stress.

4.3.4. *Multiple Sluicing and Superiority*

We have seen that in SC, *wh*-phrases have to be fronted, but their fronting need not be due to checking of a [+*wh*] feature in C. In original Rudin's (1988) analysis, this was the case with the second *wh*-phrase. In Bošković's (1997b, 1998, 1999b) analysis based on the ambivalent behavior of Superiority, in those cases which should be Superiority violations, but they are not, none of the *wh*-phrases is undergoing overt *wh*-movement to SpecCP. According to Bošković, their overt fronting is due to some other reasons. In the preceding sections, I have shown that this non-*wh*-movement overt fronting of *wh*-phrases is due to focusing reasons. Bošković takes this proposal and builds it into his analysis of the presence and absence of Superiority in SC. According to Bošković, if *wh*-phrases are undergoing only focus movement, then no Superiority effects are detected. In his system then, focus movement is not subject to Superiority. As it will be seen below, the lack of Superiority effects with focus movement is derived from Economy of Derivation due to formal properties of focus movement.

At this point I would like to add another context in which Superiority effects seem to show up in SC, which is found in the examples in (25). This context is interesting, because it involves short distance null C matrix questions, which is exactly

the context in which Superiority effects should not show up. However, as we can see in (25), movement of originally lower *wh*-phrase across a higher one results in degradation, suggesting that Superiority is at play. It would be interesting then to see why such examples as (25) exhibit restrictions on ordering of *wh*-phrases.

(25) 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

I will argue that this context involves sluicing with multiple remnants, or multiple sluicing. Considering the interactions between Superiority and multiple sluicing will reveal some interesting facts about this ellipsis phenomenon, and will shed more light on the nature of *wh*-phrase focus fronting.

4.4.1. Multiple Sluicing in SC

Consider the following SC sentences.

(26) 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

(27) 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

(28) 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 (26)-(28) 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 1998), 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 (1994a) point out that gapping in English is unacceptable with conjuncts other than *and*:

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

The conjunction in (29) 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 (30).

(30)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 (31).

(31) 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 (31) with multiple remnants. *Ali* 'but' is still possible:

- (32). 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 (32) 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 (33a) for gapping and in (33b) for sluicing.

- (33)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:

- (34) *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 (31).

Furthermore, the example in (32) with multiple remnants is perfect, just like the sluicing example in (31) and unlike the gapping example in (34). Thus, the process of eliding all the sentence material except *wh*-phrases in (32) is not gapping.

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

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

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

- (36) 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 (26)-(28) 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 (33b), but it does not have to, for example, it does not correspond to anything visible on the surface in (37).

(37) 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.

(38)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 (39).

(39)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 (26)-(28) are instances of multiple matrix sluicing, and not gapping.

One curious thing about the multiple sluicing examples in (26)-(28) is that they exhibit strict ordering of *wh*-phrases. If the higher *wh*-phrase appears first, the sentence is good, as in (26a)-(28 a), but if the lower *wh*-phrase appears first, the sentence is bad, as in (26b)-(28b). 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 (40)-(42).⁷

⁷ One might suggest at this point that the order of *wh*-phrases in (22b)-(24b) 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 (22a):

- (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 (23a) and (24a) behave in the same way as the counterpart of (22a) in (i).

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 (22)-(24), since the non-elliptical source of (iiib) has the same kind of degradation as an answer to (ii), which is not

- (40) 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?'
- (41) 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?'
- (42) A: Neko je nekoga ovdje sakrio.
 somebody is somebody here hidden
 'Somebody hid somebody here.'

the case with corresponding *wh*-constructions (cf.2):

- (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).

- 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 (26)-(28) 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 do not 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.

4.4.2. Superiority in SC

The question is what is responsible for this ambivalent behavior of 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 Bošković (1997b, 1998a, 1999), which has partially been given above, and the other is Richards (1997).

As mentioned above, Bošković draws a parallel between French and SC with respect to the contexts in which *wh*-movement takes in these languages. This leads him to a conclusion that the curious behavior of SC with respect to Superiority can be explained if one assumes that SC is a French-type language with respect to when it must have overt *wh*-movement. Overt *wh*-movement is present in long-distance, embedded and overt C

questions in SC just as in French. Short distance null C matrix questions in SC just need not involve overt *wh*-movement, just as in French. *Wh*-phrases still front, though. On the question of motivation for this fronting in null C matrix question, Bošković follows Stjepanović (1995, this chapter), 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 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 1997b 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) the focus feature attracting focus and *wh*-elements is an Attract All feature attracting all focus 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. Consider how his system works.⁸

(43) *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

So, according to Bošković (to appear b), with *wh*-movement, the attractor is an Attract 1F(eature). This means that it attracts only one feature, which has to be checked in the most economical way, i.e. through the shortest movement possible. Here, the situation is the same as in languages like English, where the attractor for *wh*-movement ([+wh] C) is clearly an Attract 1F head. Hence, if *wh*-phrase₁ does not move first to check it, a Superiority effect will result. With focus movement, the Focus attractor is an Attract All feature. Since it is an Attract All feature, it attracts all focus feature bearing elements. As

⁸ Bošković (1997b,c) offers a slightly different account of these facts. Bošković (1997b,c) proposes that the strong focus feature resides not in the target of movement, but in the moving elements. See Bošković

a result, no Superiority effects will be expected with Focus movement. The Attract All property is satisfied in the same way from the point of view of economy regardless of the order in which the *wh*-phrases move to the focused head. In (44), regardless, whether the *wh*-phrases move in 1-2-3, 1-3-2, 2-1-3, 2-3-1, 3-1-2, or 3-2-1 order, the same number of nodes will be crossed to satisfy the Attract All feature of the relevant head. Hence, the lack of Superiority with focus movement.

(44) Focus movement

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

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 lexically specified as 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

(1998b) for more discussion.

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 are attracted by the Attract All focus, and thus just as in SC, it does not trigger Superiority effects. 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 (46). (45) shows that when only two phrases are present, if *kak* is the first in the linear order and *kogo* follows, Superiority effects arise. In (46), however, as long as the highest subject moves first, there are no ordering requirements on *kak* and *kogo*.

(45)a. Kogo kak e tselunal?

who how is kissed

‘Who did he kiss how?’

b. *Kak kogo e tselunal?

how whom is kissed

(46)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 (47), and a constraint on Attract, given in (48). The definition of Attract is given in (49).

(47) 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.

(48) 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.

(49) 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 (50), 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 (51). 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 (52).

(50) C *wh*₁ *wh*₂ *wh*₃

(51) [*wh*₁ [*wh*₂ [*wh*₃ [C]]]]

(52) [*wh*₁ [*wh*₃ [*wh*₂ [C]]]]

As illustrated in (46), 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 (53), one possible derivation is when there are two such attractors (X and Y in (53)). 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.

(53)a. [CP C [XP X [YP Y [wh₁ wh₂]]]]

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 (5d). 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 (5c).

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 (6b).

Having outlined these analyses of Superiority with multiple fronting, let us go back to the SC examples in (26)-(28). 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 (26)-(28).

Under Richard's analysis, if all *wh*-phrases are required to 'tuck in' the same specifier, Superiority effects should emerge even in SC.

4.4.3. Multiple Sluicing and Superiority: Sluicing as PF Deletion

Recall that I have argued that the data in (26)-(28) 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 and Richard'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 (1997b, 1998a, 1999) 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 claims that all *wh*-phrases in SC are attracted by a strong focus feature with Attract All property.

Furthermore, Bošković (1997b) shows that in the case of overt insertion of C in short distance matrix questions, C can act as a focus licenser for *wh*-phrases 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 yields exactly the Bulgarian pattern discussed above.

Under Richard's analysis, since both *wh*-phrases are moving to the same specifier, it is not a surprise that they have to be strictly ordered. Recall that in his system, when phrases are moving to the same specifier, the highest one moves first, and then the lower one 'tucks' in the specifier below the one where the highest phrase has moved. One caveat with Richard's analysis, however, is the mechanism of arbitrarily many attractors in IP that is used to avoid Superiority effects in SC short distance matrix questions. As shown above, this mechanism of arbitrarily many attractors 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 (26)-(28) 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. So, if the analysis of multiple sluicing I have presented here is right, these data would argue against such a mechanism.

Note now that given the Economy of Derivation account of Superiority, which Bošković (1997d) argues is superior to alternative accounts based on multiple *wh*-fronting construction, and given SC data in (26)-(28), 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 base-generated 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 (46), 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:

(54)a. Ivan je nekog nekako prevario.

Ivan is someone somehow cheated

'Ivan cheated someone somehow.

b. Koga kako?

whom how

c.?*Kako koga?

d. Neko je nekog nekako prevario.

somebody is someone somehow cheated

'Somebody cheated someone somehow.'

e. Ko koga kako?

who whom how

f. Ko kako koga?

g. *Kako ko koga?

h. *Koga ko kako?

The contrast between (54b) and (54c) shows that prior to movement to SpecCP, *kako* 'how' starts lower in the structure than *koga* 'whom' (see Bošković 1997d for an explanation). The acceptability of (54e) and (54f) shows that if the highest *wh*-phrase moves first, the order of other *wh*-phrases is free, while (54g) and (54h) show that we get unacceptable constructions if the highest *wh*-phrase does not move first.

The interaction of multiple sluicing and Superiority in SC thus argue against the null IP and *wh*-phrase base-generation approach to sluicing, while they argue for the *wh*-movement followed by PF deletion approach to sluicing. Given that sluicing is an ellipsis

phenomenon, then we have here an argument that ellipsis should be analyzed as PF phenomenon, more precisely PF deletion.

4.4. Conclusion

In this chapter I have examined the kind of movement in SC, which is obligatory, i.e., in the light of the theory proposed in Chapter 3, requires the pronunciation of the highest copies. This is multiple *wh*-fronting and focus movement. Examining the syntax of multiple *wh*-fronting has shown that multiple *wh*-fronting, when it does not involve movement for checking of a [+*wh*] feature in C, shares the syntactic behavior of identificational focus phrases by virtue of occupying the same positions in overt syntax. Multiple *wh*-fronting is then decomposable in a familiar movement for checking of a *wh*-feature in C and focus movement. Furthermore, we have seen that there is a reason to believe that in SC discourse affects configurationality, in the sense that the clause structure includes discourse related projections (or in Uriagereka's (1988, 1995a,b) sense point of view projections), capable of hosting topics and foci. Pursuing the idea that syntax only establishes a relationship between the relevant positions in a sentence, by creating identical copies, and PF exclusively decides which copies should be pronounced, the question is why these movements have an appearance of being obligatory, i.e., in the light of the theory proposed in Chapter 3, why the highest copies of multiple *wh*-fronting and focus movement are pronounced. I attributed this to considerations of stress assignment, which are different from those discussed in Chapter 3 involving the default stress assignment mechanism. These phrases carry the so called emphatic or contrastive

stress. I have suggested, that if the feature attracting these elements to the relevant projections is associated in PF with prominence which results in the so called emphatic or contrastive stress, then this stress has to be realized on the highest copy. In order for this stress to be realized, then, this copy has to be pronounced.

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