

Branimir Stanković, Aleksandra Janić

SINFONIJA 6 PROCEEDINGS

Papers from the 6<sup>th</sup> conference *Syntax, Phonology and Language Analysis*  
(*SinFonIJA 6*), held at the Faculty of Philosophy of University in Niš, Serbia,  
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# SinFonJA 6 Proceedings

The 6<sup>th</sup> International Conference *Syntax, Phonology and Language Analysis (SinFonJA 6)*, held at the Faculty of Philosophy of University in Niš, Serbia, September 26–28, 2013

Editors

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## INTRODUCTION AND ACKNOWLEDGEMENTS

The articles in this volume are based on papers presented at the 6<sup>th</sup> *SinFonIJA* (Syntax, Phonology and Language Analysis) conference, held at the Faculty of Philosophy of University of Niš, Serbia, in September 2013. *SinFonIJA* is an annual conference on formal linguistics that travels around the area of Central and Southeast Europe (ex-Yugoslavia and ex-Austro-Hungarian Empire), covering all areas of theoretical linguistics, including phonology, morphology, syntax, semantics, language acquisition and historical linguistics. The primary goal of *SinFonIJA* is to connect people from Central and Southeastern Europe, but it is open to participants from all over the world. It also aims at promoting the application of different theoretical models to language analysis.

The editors are indebted to all those who have helped make this monograph a reality. First and foremost, we would like to thank all the authors for their enthusiastic participation in the conference, their cooperation in the editorial process and their 5-year patience while waiting for the *Proceedings* to be published.\* We would also like to express gratitude to our students from the Faculty of Philosophy of University of Niš, for their efforts related to the organization of *SinFonIJA 6*. Finally, we would like to express our immense gratitude to all the reviewers who devotedly participated in the process of accepting and reviewing the papers for the conference. Special thanks are also due to Prof. Andrew Nevins (University College London), Prof. Iliyana Krapova (Università Ca'Foscari Venezia) and Prof. Boban Arsenijević (Karl-Franzens-Universität Graz) for the overall reviews of the proceedings.

Branimir Stanković  
Aleksandra Janić  
(Editors)

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## **LEFT PERIPHERAL MATTERS IN SERBIAN: THE ROLE OF DISCOURSE-PRAGMATICS IN WORD ORDER VARIATION AND HOW TO MOTIVATE IT**<sup>3</sup>

**Abstract:** The paper offers an analysis of the clausal left periphery in Serbian arguing that by combining elements of existing approaches we can not only account for word order variation in the left periphery but we can also motivate it. The proposed analysis rests on assuming that notions of information structure start out with the numeration in the form of discourse-related lexical items which drive the derivation and which display very specific syntactic behaviour. On the other hand, an articulated left periphery is also assumed to exist, with projections to host the items whose discourse features, added arbitrarily when the lexical item enters the numeration (like other optional formal features, e.g. Case,  $\phi$ -features), drive the displacement.

**Key words:** *left periphery, syntax, discourse, focus, Serbian.*

### **1. Introduction**

Syntactic research on the phrasal architecture of the clause has led to the identification of various phrase structural layers within the clausal projection and the generalization that the clause is organized syntactically in the following way (cf. Chomsky 1986, 1995):

- (a) there is a core predicate layer, the lexical domain involving predicate–argument relations, on top of which
- (b) there is an inflectional layer, responsible for agreement and/or inflectional features such as tense, mood, aspect, negation and the like, and above these
- (c) there is a discourse layer, often referred to as the left periphery (or the “edge”) of the clause, which encodes discourse-linked features.

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Schematically, we have the following organization of the clause:

- (1) [Discourse layer ... [Inflectional layer ... [core predicate/lexical layer]]]

The left peripheral layer (the CP projection) is usually taken to play a role in the formal expression of discourse-related properties such as topic and focus (i.e. what Chomsky 2002 calls ‘surface-related meaning properties’). The present paper investigates the clausal syntax of Serbian, with focus on the structure of the left periphery and left peripheral phenomena. The analysis is drawn on three earlier approaches to the left periphery of clauses: Rizzi’s (1997, 2004) cartographic approach, Neeleman et al.’s (2009) approach, in which information structure is dispensed with in narrow syntax but is still treated syntactically at its interface with phonology and/or semantics and Aboh’s (2010) analysis, where it is argued that information structure and discourse functions figure as syntactic features already at the level of numeration.

The aim of the paper is threefold:

- (1) to provide empirical evidence that the left periphery of Serbian main and embedded clauses alike hosts a range of elements which have to occur in a particular order;
- (2) to propose a typology of focused elements to account for the similarities and dissimilarities between various types of focus (and topics) and
- (3) to offer an account of the mapping of syntax to discourse which combines elements of the cartographic approach (in that it proposes the existence of several functional projections), but crucially depends on feature checking of discourse-related formal features.

The paper is organized in the following way: Section 2 lays out the aspects of three earlier analyses of the left periphery relevant to the research presented here. Section 3 presents the data from Serbian with numerous examples illustrating the scope and relative ordering of elements in the left periphery, on the basis of which in Section 4 an analysis is put forward which can account for a large pool of data concerning the distribution of elements in the left periphery of the Serbian clause. Naturally, certain issues do remain which require further investigation, two of which are pointed out in Section 5. The last section concludes the paper.

## 2. Three analyses of the left periphery

In the framework of the cartographic programme (Rizzi 1997 *et seq.*, Belletti 2004, Benincá and Polletto 2004, Frascarelli and Hiterhölzl 2007), which aims to provide a map of the functional projections in clausal architecture, a highly articulated functional structure is proposed in which specialised positions have the same respective order across languages. In the complementizer system, the highest part of the sentence structure, whose left edge constitutes the interface with the linguistic or situational context and its right edge interacts with positions in the IP layer, cartography, thus, advocates a transparent one-to-one mapping of syntax to discourse: each syntactic position maps onto a specific discourse function. In Rizzi's (2004) articulated CP structure (2) SpecTopP maps exclusively onto a Topic function, SpecFocP onto a Focus function, etc.

(2) ForceP > TopP > Int(errogative)P > TopP > FocP > TopP > ModP > FinP/IP

Rizzi (1997) adopts a Criterion approach to Last Resort, which requires that a Specifier/Head agreement relation obtains between the criteria functional head and the corresponding features of the relevant class (e.g. Q, Top, Foc, R, ...):

(3)  $XP_F$  and  $X_F$  must be in a Spec-head configuration, for  $F = Q, Top, Foc, R, \dots$   
(Rizzi 2006:102)

The Criteria then operate as triggers for movement, attributing an attraction property to the head of the functional projection. Under this analysis, a one-to-one mapping between syntax and information structure is ensured by the univocal correspondence between the criteria feature triggering movement and the interface properties of the constituent moved.

According to Rizzi (2006), the criterial position in the left periphery of the sentence represents the final position of A'-chains, where the moved element receives its scope discourse-related semantic properties. Movement operations targeting the C-domain, therefore, start off from a thematic position and end in a position associated with criterial effects, i.e. interpretive, scopal or discourse, effects:

- (4) a. Which book should you read \_?  
 b. This book, you should read \_  
 c. THIS BOOK you should read \_ (rather than something else)

Even though this analysis does not resort to feature checking, it is in principle not incompatible with a feature driven system. On this view of syntax, one would at first sight expect universal ordering restrictions between any two constituents with distinct syntactic functions. Of course, reality is more complex and the way this additional complexity is dealt with in cartography is by allowing languages to vary in the extent to which movement takes place in overt or covert syntax (Neeleman et al. 2009: 29). However, various authors have provided empirical evidence that an analysis in terms of a single hierarchy of projections is untenable since it fails to solve problems such as the order of adverbials (Bobaljik 1999) or the variable placement of topics and foci in Dutch (Neeleman et al. 2009 for D), to name but a few.

Neeleman et al. (2009) have recently argued against Rizzi’s cartographic approach to sentence structure. They claim that there are no fixed landing sites for topic and focus movement and that there are cross-cutting generalizations over topics, over foci, and over contrastive elements. These jointly motivate the following four-way typology:

(5)

	Topic	Focus
Non-contrastive	aboutness topic [topic]	new information focus [focus]
Contrastive	contrastive topic [topic, contrast]	contrastive focus [focus, contrast]

Neeleman et al. (2009) take topic and focus to be basic notions in information structure that can be enriched to yield a contrastive interpretation. In other words, they hold that a contrastive topic is an aboutness topic interpreted contrastively and similarly, a contrastive focus is a new information focus interpreted contrastively. Treating [topic], [focus] and [contrast] as privative features, the authors provide evidence from various languages to support their claim that since [contrast] is

dependent on either [topic] or [focus], we expect to find rules that mention [topic] and therefore generalize over aboutness topics and contrastive topics, rules that mention [focus] and therefore generalize over new information focus and contrastive focus, and rules that mention [contrast] and therefore generalize over contrastive topic and contrastive focus.

The conclusions these authors reach imply that one cannot assume either the existence of a fixed clausal skeleton or the idea that movement is triggered by properties of the specifier, especially in terms of the Dutch data which make it clear that the addition of ContrastP to the topic-focus hierarchy requires an additional ordering statement but none of the three logical possibilities can account for the data, suggesting that although [contrast] has syntactic effects that can be distinguished from those of [topic] and [focus], a cartographic decomposition into three separate functional projections is not possible.

Aboh (2010), on the other hand, claims that while discourse information (e.g., topic and focus) which discourse participants assign to a linguistic expression, and which is not part of the numeration, is invisible to the computational system  $C_{HL}$  and adding these features as the derivation proceeds would violate the inclusiveness condition (Chomsky 1995) in many languages of the world, notions of information structure such as Topic, Focus, and Interrogative force are determined by lexical choices that are manipulated by the computational system in the course of various syntactic operations (e.g., feature matching, displacement). In these languages therefore, the numeration  $N$  of a sentence containing a Topic, a Focus or an Interrogative expression  $(\pi, \lambda)$  must include Topic, Focus, or Interrogative lexical choices, which leads him to the formulation in (6).

- (6) A numeration  $N$  pre-determines the Information Structure of a linguistic expression.

In other words, core syntax embeds properties of Information Structure, though languages may clearly vary with regard to the various choices they make in implementing (6). Assuming the minimalist hypothesis that lexical properties determine the derivation, Aboh (2010) shows that notions of information structure start out with the numeration in the form of discourse-related lexical items which drive the derivation. This view is supported by empirical data from typologically different languages, where discourse-related particles encode the features Interrogative force, Topic, and Focus, and display very specific syntactic behavior with regard to, for instance, question-answer pairs, wh-movement, and ellipsis. The

analysis of these discourse-particles compared to other commonly assumed syntactic features (e.g., tense, mood, aspect) leads to the conclusion that discourse features are comparable to other optional formal features (e.g., Case,  $\phi$ -features) that are added arbitrarily when the lexical item enters the numeration.

Having laid out the basics of three approaches that will, to a varying extent, prove necessary for the analysis in Section 4, in what follows, I present empirical evidence from Serbian which I will use in support of the view that that discourse features are added arbitrarily when the lexical item enters the numeration.

### 3. Left peripheral elements in Serbian

Serbian is a discourse configurational language with a basic S-V-O word order: word order is in principle free but word order variation has an effect on the discourse-pragmatic status of what is being said. Assuming neutral intonation (marked with the apostrophe), the examples in (7) are all grammatical but are not equally felicitous in all contexts, since they differ with respect to what is being presented as new information – in (7a) it is *Mariji*, in (7b-c) it is *pismo* and in (7d) the verb *piše*:

- |        |                                     |        |            |          |
|--------|-------------------------------------|--------|------------|----------|
| (7) a. | Jovan                               | piše   | pismo      | ‘Mariji. |
|        | John.Nom                            | writes | letter.Acc | Mary.Dat |
|        | ‘John is writing a letter to Mary.’ |        |            |          |
| b.     | Jovan                               | piše   | Mariji     | ‘pismo.  |
| c.     | Jovan                               | Mariji | piše       | ‘pismo.  |
| d.     | Jovan                               | Mariji | pismo      | ‘piše.   |

Like in many other languages, topics in Serbian assume a sentence initial position. Given that following Reinhart (1981) we use ‘topic’ in its aboutness sense, as the entity that the utterance (or rather, the discourse) is about (i.e. linguistic topics, really), it is clear that only one such topic is allowed per sentence. (I am leaving aside the complex question of how to distinguish sentence topics from discourse topics). However, clearly, there are contexts in which more than one element may qualify as the topic, while the other given entities (underlined) may occur in any order, though again, the various orders in (8) do have a different discourse-

-pragmatic effect. Note also that the sentence is tilted if the given information is towards the end of the sentence (8g):

(8) (Tell me what happened to Mary and Peter yesterday.)

- |    |                                 |        |               |               |                 |
|----|---------------------------------|--------|---------------|---------------|-----------------|
| a. | <i>Juče</i>                     | je     | <u>Marija</u> | <u>Petra</u>  | POLJUBILA.      |
|    | yesterday                       | Aux.Cl | Mary.Nom      | Peter.Acc     | kissed          |
|    | 'Yesterday, Mary KISSED Peter.' |        |               |               |                 |
| b. | <i>Juče</i>                     | je     | <u>Petra</u>  | <u>Marija</u> | POLJUBILA.      |
| c. | <i>Marija</i>                   | je     | <u>Petra</u>  | <u>juče</u>   | POLJUBILA.      |
| d. | <i>Marija</i>                   | je     | <u>juče</u>   | <u>Petra</u>  | POLJUBILA.      |
| e. | <i>Petra</i>                    | je     | <u>Marija</u> | <u>juče</u>   | POLJUBILA.      |
| f. | <i>Petra</i>                    | je     | <u>juče</u>   | <u>Marija</u> | POLJUBILA.      |
| g. | <i>#Petra</i>                   | je     | POLJUBILA     | <u>juče</u>   | <u>Marija</u> . |

A topic may be contrastively interpreted: using Lee's (2003, following Krifka 1991) test, a contrastive topic is preceded by a conjunctive question, as in (9), where the speaker asks about the entire topic referent set 'children', but the set can be cut into partitions and the respondent actually presupposes a conjunctive question, 'What did Mary and the rest give you for your birthday?'. In other words, the contrastive topic is always in a part-whole relationship with the topic of the context question.

- (9) A: Šta su ti deca poklonila za rođendan?  
 what.Acc did.Cl you.Cl.Dat children.Nom give for birthday.Acc  
 'What did the children give you for your birthday?'
- B: [*Marija*]<sub>CT</sub> mi je poklonila MINDUŠE<sub>IF</sub>.  
 Mary.Nom me.Cl is.Cl given earrings.Acc  
 'Mary gave me earrings.'

From this it follows that there may be only one topic per sentence and it can either be non-contrastive or contrastive.

Moving on to another IS notion, that of focus, the information focus normally assumes sentence final position in Serbian, as in answer to (10). Although all six word orders are grammatical, only (10a) is felicitous in the given context:

- (10) (Who is Mary scolding?)
- a. Marija           grdi     PETRA.  
Mary.Nom   scolds   Peter.Acc  
'Mary is scolding Peter.'
  - b. #Marija        PETRA grdi.
  - c. ?PETRA        Marija grdi. (non-final IF)
  - d. ?PETRA        grdi     Marija.
  - e. #Grdi         Marija   PETRA.
  - f. #Grdi         PETRA   Marija.

On the other hand, contrastive foci, which involve the selection of a subset from a set of alternatives, may occur in any position in the sentence, including the *in situ* position, as evidenced by the following examples:

- (11) A: Tell me about Peter. I heard he met Mary yesterday.
- B1: (Ne, Petar       je    u Beogradu.) **Pavle**    je    sreo Mariju.  
No Peter.Nom is.Cl in Belgrade Paul.Nom is.Cl met Mary.Acc  
'(No, Peter is in Belgrade.) **Paul** met Mary/It was Paul who met Mary.'
- B2: (Ne, Petar je u Beogradu.) Mariju je **Pavle** sreo.
- B3: (Ne, Petar je u Beogradu.) Mariju je sreo **Pavle**.
- (12) A: Tell me about Peter. I heard he met Mary yesterday.
- B1: (Ne, Marija       je    u Beogradu.) Petar        je    sreo **Anu**.  
No Mary.Nom is.Cl in Belgrade Peter.Nom is.Cl met Ann.Acc  
'No, Mary is in Belgrade. Peter met **Anu**.'
- B2: (Ne, Marija je u Beogradu.) Petar je **Anu** sreo.
- B3: (Ne, Marija je u Beogradu.) **Anu** je Petar sreo.



Note that the native speaker judgements given here sharply contrast with those in Stjepanović (1999, 2003), who claims that contrastive focus in Serbo-Croatian is licensed both syntactically (by movement into a preverbal position) and prosodically (by contrastive accent). She contends, however, that movement is not obligatory and that prosodically marked contrastively focused phrases can be left in situ but this is a less felicitous option (13c). Bošković (p.c.), on the other hand, holds that the acceptability of sentence final contrastive focus increases with the heaviness of the focalized element and thus (14) is fully acceptable while (13c) is only marginally acceptable.

(13) a. **Mariju** je Petar zagrlio.

**Mary** Aux.Cl Peter.Nom hugged

‘Peter hugged **Mary**./It was Mary who Peter hugged.’

b. Petar je **Mariju** zagrlio.

c. ?? Petar je zagrlio **Mariju**.

(14) Petar je zagrlio **Marijinu sestru od tetke**.

Peter.Nom Aux.Cl hugged Mary’s.Acc sister.Acc from aunt.Gen

‘Peter hugged Mary’s cousin.’

Contrastively and non-contrastively focused elements are in complementary distribution: while the latter type provides new information, the former contrasts one element of a set with other elements of the same set, hence it is clear that the same utterance may not both give new information and express a contrast:

(15) a. Juče sam kupila knjigu U PLATOU.

yesterday Aux.Cl bought book.Acc in Plato.Acc

‘Yesterday I bought a book at Plato.’ (bookshop)

b. **Juče** sam kupila knjigu u Platou.

c. \***Juče** sam kupila knjigu U PLATOU.

However, both contrastive and non-contrastive foci freely co-occur with both contrastive and non-contrastive topics as long as the topical element is higher than

the focal one. Consider also (16), where we have two contrastive elements, both a topic (*Petar*) and a focus (*šah*):

(16) Moja deca nikada ne igraju igre. Zapravo, to i nije sasvim tačno.

my.Nom children.Nom never not play games.Acc actually that and not completely true

‘My children never play games. Well, that’s not quite true.’

**Petar** ponekad igra **šah**.

Peter.Nom sometimes plays chess.Acc

Peter occasionally plays chess.’

Given Lee’s (2003) conjunctive test for contrastive topics and his disjunctive test for contrastive focus, the above sentence actually means the following: *Peter and my other child(ren) play chess* or *Peter and my other child(ren) play video games* or *Peter and my other children play Risiko*, etc. That this holds true regardless of whether the grammatical function of the topical XP is shown in (17) and (18):

(17) A: Pričajte mi o Rimu. Je li neko bio tamo? (Tell me about Rome. Has anyone been there?)

B: Ne znam za Rim. **Marija** je bila u Veneciji.

not know for Rome.Acc Mary.Nom is.Cl been in Venice.Loc

‘I don’t know about Rome. Mary has been to Venice.’

#B: U Veneciji je **Marija** bila.

(18) A: Šta je sa razglednicama? Kome je njih poslala Marija? (What about the postcards? Who did Mary send those to?)

B: Ne znam za razglednice. **Pismo** je Marija poslala **Jovanu**. / **Pismo** je Marija **Jovanu** poslala.

not know for postcards.Acc letter.Acc is.Cl Mary.Nom sent John.Dat / letter.Acc is Mary John.Dat sent

‘I don’t know about the postcards. As for the letter, Mary sent it to John.’

#B: **Jovanu** je **pismo** Marija poslala. / **Jovanu** je Marija poslala **pismo**.

While there may be only one topic in the utterance (either contrastive or noncontrastive) it seems that the number of contrastively focused XPs is not limited:

- (19) A: Odakle ti ove minđuše? Je li ti ih Petar poklonio za rođendan? (Where did you get these earrings? Did you get them from Peter for your birthday?)

B: Ne, **Marko** mi ih je dao za **8. mart.**

no Mark.Nom me.Cl them.Cl is.Cl given for 8th March

‘No, Mark gave them to me for March 8th.’

In other words, in the above example it was *Mark* or *Peter* or *Sam* or *my mother* or *any other usual present-giver* who gave them to me for *my birthday* or *New Year* or *March 8th* or *any other holiday which implies giving presents*.

Another type of elements found in the left periphery in Serbian are *wh*-XPs. Based on the parallelism holding between these and contrastively focalized phrases Stjepanović (1999, 2003) concludes that multiple *wh*-fronting is a sub-case of focus movement. In this sense, SC offers support to the often noted observation that if a language marks focus syntactically (as she claims it does), these positions also host *wh*-phrases. Looking at Serbian data we see that in both matrix and embedded *wh*-questions the *wh*-XPs may occur in any order:

- (20) a. Ko će šta obaviti?

who.Nom will.Cl what.Acc sort out

‘Who will sort out what?’

b. Šta će ko obaviti?

- (21) a. Ko li će šta obaviti?

who.Nom *li* will.Cl what.Acc sort out

‘Who will sort out what, I wonder?’

b. Šta li će ko obaviti?

- (22) a. Pitam se ko će šta obaviti.

wonder *se* who.Nom will.Cl what.Acc sort out

‘I wonder who will sort out what.’

b. Pitam se šta će ko obaviti.

What is more, if wh-words and contrastively focused XPs are licensed in the same position, we would expect the two types of elements to be in complementary distribution or if they do co-occur, their order should be free. This, however, is not the case:

(23) Znam ko je šta kupio **Petru**. A... (I know who bought what for Peter. But...)

- a. ko je šta kupio **Mariji**?  
who.Nom is.Cl what.Acc bought Mary.Dat  
‘who bought what for Mary?’
- b. ko je šta **Mariji** kupio?
- c. ko je **Mariji** šta kupio?
- d. ??**Mariji** ko je šta kupio?
- e. \***Mariji** je ko šta kupio?
- f. \***Mariji** ko je kupio šta?

The last two examples are ill-formed because the wh-words did not front, as in (23a-b). Example (23c) illustrates the possibility of inserting a contrastively focused (CF) XP between two wh-XPs, while the status of (23d) suggests that the CF XP may not occur in a position higher than at least one wh-word. We get the same judgements when the CF XPs is the subject and the wh-words are objects:

(24) Čula sam da je Ivana kupila deci slatkiše. A ... (I heard that Ivana bought sweets for the children. And ...)

- a. kome je šta kupio **Petar**?  
who.Dat is.Cl what.Acc bought Peter.Nom  
‘what did Peter buy for whom?’
- b. kome je šta **Petar** kupio?
- c. kome je **Petar** šta kupio?
- d. \***Petar** kome je šta kupio?
- e. \***Petar** je kome šta kupio?
- f. \***Petar** kome je kupio šta?

To get a clearer picture of the situation, it would be useful to check the structural position of *wh*-words relative to (contrastive) topics (remember that CF obligatorily occur lower than CT). Though it is difficult to construe such a context, it seems to me that (25) might be a tolerable example. If *tvoj sin* ('your son') is indeed a CT here (being but one member of the topic set), then we encounter an extremely interesting situation here since as opposed to the relatively free CF elements which nevertheless have to occur structurally lower than the CT, *wh*-words have to occur in initial position, preceding all other elements, including even the CT (note that the clitic-second effect is controlled for in all the examples below):

(25) A: Kako su deca prošla na ispitu? (How did the children do in the exam?)

B: Ne znam za sve. (I don't know about everyone.)

a. \**Tvoj sin* je kako prošao?

your.Nom son.Nom is.Cl how done

'How did your son do?'

b. \**Tvoj sin* je prošao kako?<sup>4</sup>

c. Kako je *tvoj sin* prošao?

d. Kako je prošao *tvoj sin*?

Embedded clauses show exactly the same distribution of elements, except for the complementizer, which has to precede all other left peripheral elements:

(26) A: Pričajte mi o Rimu. Je li neko bio tamo? (Tell me about Rome. Has anyone been there?)

B: Ne znam za Rim. Znam/Mislim ... (I don't know about Rome. I think...)

a. da je *Marija* bila u Veneciji.

that is.Cl Mary.Nom been in Venice.Loc

'that Mary has been to Venice.'

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<sup>4</sup> Throughout I am neglecting the possibility of interpreting certain sentences as echo-questions since these do not seek new information but rather express surprise or disbelief and require the repetition of the word/phrase the echo-word stands for. Echo questions are only formally questions and have a characteristic intonation contour with sentential stress on the *in situ wh*-word.

- b. #*Marija* da je bila u *Veneciji*.
- c. #da je u *Veneciji* *Marija* bila.
- d. #u *Veneciji* da je *Marija* bila.

Crucially, while many of the above strings do form grammatical sentences in Serbian they cannot be construed with the intended interpretation, e.g. in (26c-d), if anything is interpreted as CT, *u Veneciji* has to be, whereas *Marija* receives a CF interpretation, once again proving that CT has to be structurally higher than a non-wh-CF.

Having laid out the data in what follows I will outline my proposal.

#### **4. The proposed analysis**

The account I propose here makes use of aspects of all three approaches presented in Section 2. Namely, I am going to argue for a more elaborate structure of the traditional CP projection but I am not going to assume a Criterion approach. Instead, I will argue for a different view and a different role of discourse features.

Let me start with the following observation: wh-words always have to front and may occur in any order in all contexts. On the other hand, a non-wh-CF may occur in various positions lower than the CT, including the *in situ* position. If the free order of the fronted wh-words is a consequence of their (contrastive) focus movement (rather than wh-movement which would create a superiority condition violation), we reach a contradictory situation: the initial position of the wh-words **is** a consequence of contrastive focusing but unlike regular CF XPs, wh-words cannot occur anywhere but have to move to a left peripheral position. As a solution, suppose that in addition to the inflectional features like person, number and Case, elements can also have discourse features, as well as a [wh] feature. For Serbian, it clearly does not suffice to assume that the discourse features in question are just [topic], [focus] and [contrast], with the latter being contingent on either [topic] or [focus]. With the addition of the [wh] feature we can now explain the fact that both CF and non-CF may have the [wh] feature. To illustrate this claim: the scope of reference of D-linked wh-XPs is given in the discourse, therefore they cannot be inherently focused and thus they do not move to initial position. However, in cases when there is no other element that could type the sentence (i.e. signal its interrogative force, cf. Cheng 1997), even D-linked wh-XPs have to front, as shown in the examples below:

- (27) a. Ko je kupio koju knjigu?  
who.Nom is.Cl bought which.Acc book.Acc  
'Who bought which book?'
- b. Ko je koju knjigu kupio?
- c. \*Koji knjigu je ko kupio?<sup>5</sup>
- (28) \*Marija je kupila koju knjigu?  
Mary.Nom is.Cl bought which.Acc book.Acc  
'Which book did Mary buy?'

Just as wh-XPs may be either CF or not, so non-wh-XPs may be CF or not, too. In the former case we have CF non-wh-XPs like *Mariju* in (29), and in the later case we are looking at an information focus (IF), as in (30):

- (29) A: Da li si videla Mariju ili Petra? (Did you see Mary or Peter?)  
B: Videla sam **Mariju**.  
seen am.Cl Mary.Acc  
'I saw Mary.'
- (30) A: Jesi sreala nekog na koncertu? (Did you meet anyone at the concert?)  
B: Da, sreala sam MILANA.  
yes met am.Cl Milan.Acc  
'Yes, I met Milan.'

---

<sup>5</sup> Note that some informants do accept this sentence (as marked) but stress that *ko* 'who' has to be interpreted as D-linked, equivalent to *koji čovek* 'which man'.

	[+wh]	[-wh]
[+kfoc]	non-D-linked <i>wh</i> -phrases <i>Ko je udario Mariju?</i> who.Nom is.Cl hit Mary.Acc ‘Who hit Mary?’	contrastively focused non- <i>wh</i> -XPs <i>Ivan je dao knjigu <b>Mariji.</b></i> Ivan.Nom is.Cl given book.Acc Mary.Dat ‘Ivan gave the book to <b>Mary.</b> ’
[-kfoc]	D-linked <i>wh</i> -phrases <i>Ko je kupio koju knjigu?</i> who.Nom is.Cl bought which.book.Acc ‘Who bought which book?’	non-contrastive (i.e. information) focus ( <i>Who did Mary hit?</i> ) <i>Marija je udarila <u>PETRA.</u></i> Mary.Nom is.Cl hit Peter.Acc ‘Mary hit PETER.’

Thus, it seems that for a proper account of the typology of focus in Serbian we need to assume the existence of two valued features with which we propose the following typology:

(31)

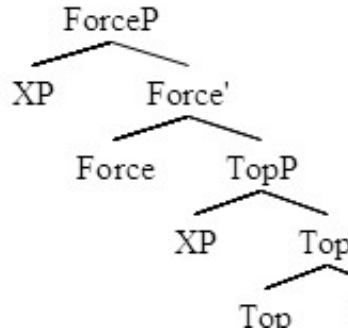
As regards topics, we have demonstrated that there are strong topics (sentential topics) and weak topics or discourse oriented elements (given in the discourse). Only the former type of topics moves into SpecTopP in order to check the [*utop*] feature of the Top head against its own inherent [+top] feature. Similarly, only a strong/sentential topic can be interpreted contrastively, i.e. it is only with this type of topics that we may distinguish between CT and non-CT. Weak topics on the



other hand are necessarily interpreted as non-contrastive and they do not belong in the left periphery therefore I will have nothing more to say about them.<sup>6</sup>

I suggest the following structure of the left periphery in Serbian:

(32)



<sup>6</sup> If, by analogy with focus, one insisted on a typology of topics, one might propose that the key difference between strong and weak topics lies in the feature [+sentential]. This might give us the following four-way typology:

	[+sentential]	[-sentential]
[+ktop]	Contrastive sentential topic <i>(Did the kids call you?)</i> <i>Ne znam za decu. <b>Petar</b> nas je zvaao juče.</i> 'I don't know about the kids. <b>Peter</b> called us yesterday.'	-
[-ktop]	Noncontrastive sentential topic <i>(Tell me about Peter.)</i> <i><u>Petar</u> je iz Novog Sada.</i> ' <u>Peter</u> is from Novi Sad.'	Discourse-oriented elements <i>(What did Ana say about John yesterday?)</i> <i>Ana je o <u>Jovanu</u> rekla da je glup.</i> 'Ana said <u>about John</u> that he is stupid.'

Although the typology proposed here overgenerates, the impossibility of contrastively interpreting non-sentential topics might suggest that contrastive interpretation is contingent on true/strong topichood or focushood. This might be the reason why neither non-sentential topics nor information foci may be contrastively interpreted.

Following Rizzi, I take ForceP to be the projection in charge of the illocutionary force of the clause (in relative clauses it has a [*urel*] feature, as a result of which the relativizer moves into its Spec). In interrogative clauses, Force bears the instruction attract-one-wh and attracts an XP with a matching interpretable feature into its Spec. In declarative clauses Force hosts *da*, roughly corresponding to English *that*, see the discussion below.

The head of TopP attracts a constituent with the feature [+top] in order to check its own [*utop*] feature, regardless of whether the attractee also has a contrastive feature or not.

As a result of the attract-all-focus instruction, the Foc head attracts into its Spec all the elements which bear the matching feature +(k)foc in order to check its own [*ufoc*] feature.

Finally, FinP *je* encodes the finiteness of the clause.

Although the proposed structure is admittedly not a simple one it allows us to account for the observed word order patterns. One final stipulation we need to make, however, is that topicalization and focusing are not the same type of operator movement as wh-movement is. Actually, in Serbian, a language in which focus movement can and does (seem to) feed wh-movement,<sup>7</sup> this seems to be the only way to explain the lack of operator freezing effect of Bošković (2008c):

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

Note that Park (2006) claims that focusing can be reconstructed (in the sense of Saito 1992), in which case the focused XPs (wh-words) are interpreted in their base position and can be wh-moved because this does not violate Operator freezing: after reconstruction, only the highest wh-word will qualify for movement into initial position. However, Park's analysis is based on language data which native speakers in Serbia do not share: for them any order of wh-XPs is always equally grammatical in all contexts, including those which Bošković claims to show Superiority effects – long distance questions (34), root questions with overt *li* (35) and embedded multiple *wh*-questions (36).

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<sup>7</sup> According to the Criterial view advocated by the cartographers, the assignment of scope-discourse properties is done on a strictly structural basis, like the assignment of argumental properties. The criterial positions (the positions dedicated to the expression of some scope-discourse property) terminate chains: a phrase meeting a criterion is frozen in place, and its chain cannot extend further. This is what Rizzi (2006) terms Criterial Freezing.

(34) a. Ko koga kažeš da je poljubio?

who.Nom who.Acc say that is.Cl kissed

‘Who do you say kissed whom?’

b. Koga ko kažeš da je poljubio?

(35) a. Ko li će šta uraditi?

who.Nom *li* will.Cl what.Acc do

‘Who will do what?’

b. Šta li će ko uraditi?

(36) a. Pitam se gde li će šta Marija ostaviti.

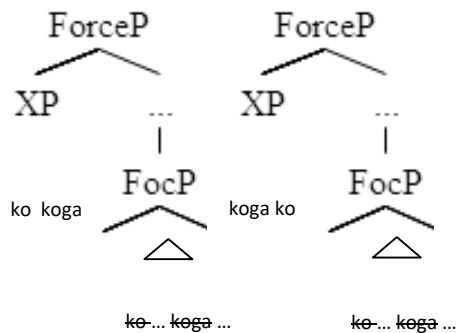
wonder *se.refl* where *li* will.Cl what.Acc Mary.Nom leave

‘I wonder where Mary will leave what.’

b. Pitam se šta li će gde Marija ostaviti.

This is why I propose that all the elements that bear a [+foc] feature move to the multiple Specifier of the Foc head, in line with the attract-all-focus instruction, in either of the following two ways:

(37) a. b.



In SpecFocP all the wh-XPs are equidistant from the interrogative Force head, thus either one of them may raise, as required by the attract-one-wh instruction and in

order to type the clause as a question (Cheng 1997). This happens in matrix and embedded contexts alike. Namely, Cheng claims that each clause must be identified in overt syntax as being either declarative or interrogative. Clauses are signalled as interrogative either by an interrogative particle or by movement of *wh*-words into initial position. Given that the interrogative clitic *li* is not used in Serbian *wh*-questions (more precisely, it is used but it does not signal illocutionary force but rather the curiosity of the speaker), a *wh*-word must clearly raise to SpecForceP to type the clause, as shown in the following diagrams for the embedded clauses of (39):

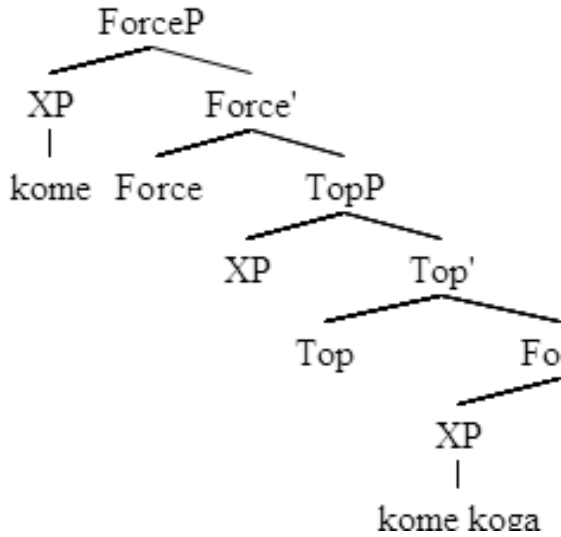
- (38) a. Koga li će ko optužiti za zločin?  
 who.Acc *li* will.Cl who.Nom accuse for crime.Acc  
 ‘Who will accuse whom of the crime (I wonder)?’

b. Ko li će koga optužiti za zločin?

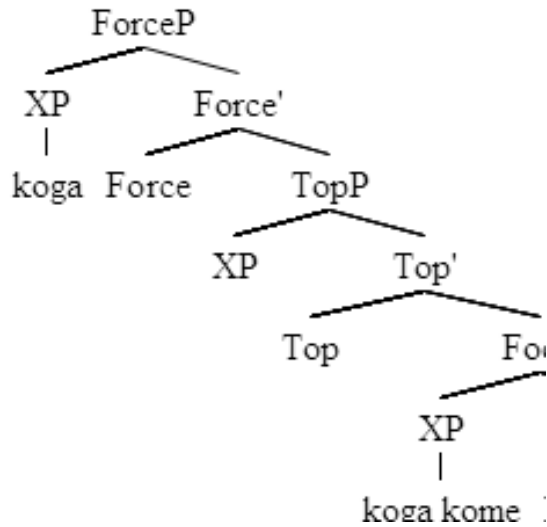
- (39) a. Ne znam kome će koga dodeliti za saradnju.  
 not know who.Dat will who.Acc assign for cooperation.Acc  
 ‘I don’t know who will be assigned to cooperate with whom.’

b. Ne znam koga će kome dodeliti za saradnju.

(40) a.



b.



Strictly speaking, focusing does serve as input for wh-movement in this approach and Park's explanation in terms of the reconstruction of focusing cannot be applied because it would always result in attracting the structurally highest XP to SpecForceP, i.e. we would expect to see Superiority effects which simply do not show up in Serbian. On the other hand, FocP has the attract-all-focus instruction, which enables all the [+wh] focused XPs to be equally good candidates for checking the [ $\mu$ wh] feature of the interrogative Force head.

An additional benefit of this approach is that it can also account for why a CF non-wh-XP cannot precede a wh-XP in a matrix (41c) or embedded wh-question (42c): the wh-word fails to raise to SpecForceP to check the uninterpretable feature of Force and type the clause as a question and the derivation crashes.

(41) Znam ko je bio u Madridu. A... (I know who has been to Madrid. But... )

a. ko je bio u **Veneciji**?

who.Nom is.Cl been in Venice.Dat

'who has been to Venice?'

b. ko je **u Veneciji** bio?

c. \***u Veneciji** je ko bio?

(42) Znam ko je bio u Madridu. Zanima me... (I know who has been to Madrid. I want to know...)

- a. ko je bio u **Veneciji**?
- b. ko je **u Veneciji** bio?
- c. **\*u Veneciji** je ko bio?

However, in multiple wh-questions we find that it is enough for one wh-XP to be structurally higher than a non-wh-XP, as in (43)

(43) Znam ko je šta kupio **Petru** na moru. Pitam se samo ... (I know who bought what for **Peter** at the seaside. I am just wondering...)

- a. ko je šta kupio **Mariji**?  
who.Nom is.Cl what.Acc bought Mary.Dat  
'who bought what for **Mary**?'  
b. ko je šta **Mariji** kupio?
- c. ko je **Mariji** šta kupio?
- d. ??**Mariji** ko je šta kupio?
- e. **\*Mariji** je ko šta kupio?
- f. **\*Mariji** ko je kupio šta?

This is the expected outcome under the current analysis: one [+wh] element (in this case, *ko*) moves to SpecForceP and types the clause as interrogative by checking the [ $\nu$ wh] feature of Force. The other wh-XP, as well as the non-wh-CF only move as high as SpecFocP. From this it follows that the order of the elements in SpecFocP is free, as shown in (43b,c). Since prior to merging ForceP into the structure all the CF XPs are in SpecFocP, we would expect either one of the [+wh] XPs to be able to raise to initial position (SpecForceP). That the prediction is borne out is shown in (44):

(44) Znam ko je šta kupio **Petru** na moru. Pitam se samo... (I know who bought what for **Peter** at the seaside. I am just wondering...)

a. šta je ko kupio **Mariji**?

what.Acc is.Cl who.Nom bought Mary.Dat

‘who bought what for **Mary**?’

b. šta je ko **Mariji** kupio?

c. šta je **Mariji** ko kupio?

d. ??**Mariji** šta je ko kupio?

e. \***Mariji** je šta ko kupio?

f. \***Mariji** šta je kupio ko?

### 5. Some additional problems

Although the present analysis can account for a large pool of data concerning the distribution of elements in the left periphery of the Serbian clause, there remain several issues that require further investigation. One such issue concerns the possibility of leaving CF-non-wh-XPs like *u Veneciji* (41-42), and *Mariji* (43-44) in sentence final position, which is not expected under the current analysis. However, if we add several more sentential constituents, it becomes clear that CF elements may actually be pronounced in various positions lower than the (C)Topic projection. A possible solution of this problem may lie in the following: in languages which mark CF prosodically (and we have shown that Serbian exploits prosodic means significantly more than syntactic means) CF-marked elements do not have to be pronounced in SpecFocP. And while it might be appealing to claim that this is so not only because due to rich morphosyntax word order is quite flexible in Serbian but also because prosodically marked elements are unambiguously identified as being CF even without them having to move into a specific structural positions (as is the case with Turkish or Hungarian), such a claim would also imply the possibility of pronouncing wh-XPs *in situ*, an option which is not available in Serbian.

Note, however, that CF XPs may not be pronounced higher than a CT, in line with the assumption that the Top projection is structurally higher than FocP, but that a wh-XP may precede a topic if it has raised to SpecForceP for reasons already

discussed. The fact that the topic precedes focused elements is probably due to the fact the topics always represent old, given information, while focused phrases either express new information or correct the statement of the interlocutor. In a certain sense, then, one may view the order of topic and focus as being simply determined by information structure (cf. Heageman 2009).

The second potential weakness of the analysis I tried to outline here concerns the operator freezing effect – clearly, the issue of one operator movement (focusing) feeding another operator movement (wh-movement) is not welcome but at this point, it seems that the controversial step argued for does give the desired results.

## **6. Conclusion**

I have argued in the present paper that the left periphery of the Serbian clause is best analysed if we assume the existence of several distinct functional projections. However, this does not mean that the analysis proposed is a purely cartographic one. In fact, movement of elements is motivated by checking discourse-related features rather than criterial features. This is in line with Aboh's (2010) proposal that notions of information structure start out with the numeration in the form of discourse-related lexical items which drive the derivation.

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## ON THE NATURE OF PRENUMERAL ADJECTIVES

**Abstract:** Following Greenberg's generalization 20 pronominal adjectives follow numerals. In this paper we discuss a group of adjectives that appear in unexpected positions: adjectives preceding numerals pronominally. We argue that these adjectives violate cross-linguistic generalizations only apparently, as the noun phrases with such adjectives actually contain additional covert structure – structure that is not realized phonologically/phonetically.

**Key words:** *Greenberg's generalization 20, adjectives, numerals, noun phrase, Slovenian syntax.*

### 0. Introduction

In this paper we discuss a group of adjectives that appear in unexpected positions: adjectives preceding numerals pronominally. We argue that these adjectives violate cross-linguistic generalizations only apparently, as the noun phrases with such adjectives actually contain additional covert structure – structure that is not realized phonologically/phonetically.

It has been noted already by Greenberg (1963) that in pronominal position numerals universally precede adjectives; finding pronominal adjectives pronominally would thus be unexpected. Greenberg's generalization 20 states that elements inside the DP come in a certain order: when a demonstrative, numeral and adjective precede the noun, the order is always Dem > Num > Adj > N, and when a demonstrative, numeral and adjective follow the noun, they are found either in the same or in the opposite order, so the string is either N > Dem > Num > Adj or N > Adj > Num > Dem.<sup>10</sup>

Cinque (2005) shows that of the 24 logically possible ordering combinations of the four elements Dem, Num, Adj, and N, only 14 orders are attested in natural

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<sup>10</sup> The actual generalization states “When any or all of the items (demonstrative, numeral, and descriptive adjective) precede the noun, they are always found in that order. If they follow, the order is either the same or its exact opposite.” (Greenberg 1963: 87).

languages. He further claims that in the attested languages, the prenominal position never exhibits adjectives preceding the numerals. Moreover, Cinque (2005) argues that if we posit a fixed sequence of functional projections with the order in (1) and two further restrictions on movement (which are not relevant for our purposes at this point), we will be able to derive all of the attested orders of these elements, and we will also rule out all of the unattested orders as underivable (cf. also Abels & Neeleman 2009 for a simpler solution of this cross-linguistic puzzle that also relies on the same underlying order of merge of these four elements).

- (1) [ DemP [ NumP [ AdjP [ NP ]]]]

Therefore, adjectives preceding numerals are unexpected not only because they violate a well-established cross-linguistic generalization, but also because they should, assuming the universal hierarchy of functional projections, simply not be derivable.

### 1. Prenumeral adjectives

The existence of several cases of prenumeral adjectives has already been noted for various languages. Babby (1985) mentions the examples in (2) from Russian, Ionin & Matushansky (2006) mention the English example in (3) (see also Jackendoff 1977).

- (2) a. *predstojasščie pjat' novyx voprosov* (Russian)  
 coming<sub>ACC.PL</sub> five<sub>ACC</sub> new<sub>GEN.PL</sub> questions<sub>GEN.PL</sub>  
 'coming five new questions' (Babby 1985: 5, (12))

- b. *Ja vypil* (I drank): (Russian)  
*dobryx pjat' bol'six butylok vina*  
 good<sub>GEN.PL</sub> five<sub>ACC</sub> big<sub>GEN.PL</sub> bottles<sub>GEN.PL</sub> wine<sub>GEN</sub>  
 'I drank a good five big bottles of wine.' (Babby 1985: 6, (11a))

- (3) *a stunning one thousand/twenty five books* (Ionin & Matushansky 2006: 324, (18))

For the most part, these mentions involve cases in which the adjective is seen as modifying the numeral alone. Solt (2007) notes that there are two types of



“modified cardinals”. The adjective can modify either the following nominal expression (quality reading), as in (4a), or it can modify the quantity or amount of the following nominal expression (quantity reading), (4b).

- (4) a. *A lucky three students got fellowships.* (Solt 2007, 2, (1a))  
b. *An incredible eight thousand soldiers died at Gettysburg.* (Solt 2007, 2, (1c))

Cinque (2010) notes the possibility that in English, the adjectives *possible* and *wrong* can be located higher than NumP, the projection of cardinal numerals (Cinque 2010: p. 131, fn 1).

- (5) a. *She always goes to see every possible first two games.* (Cinque 2010)  
b. *She always goes to see every first two possible games.* (Cinque 2010)
- (6) a. *We discussed the wrong two answers* (=which it was wrong ~~for us to discuss~~)  
b. *We discussed the two wrong* (= incorrect) *answers.* (both Cinque 2010)

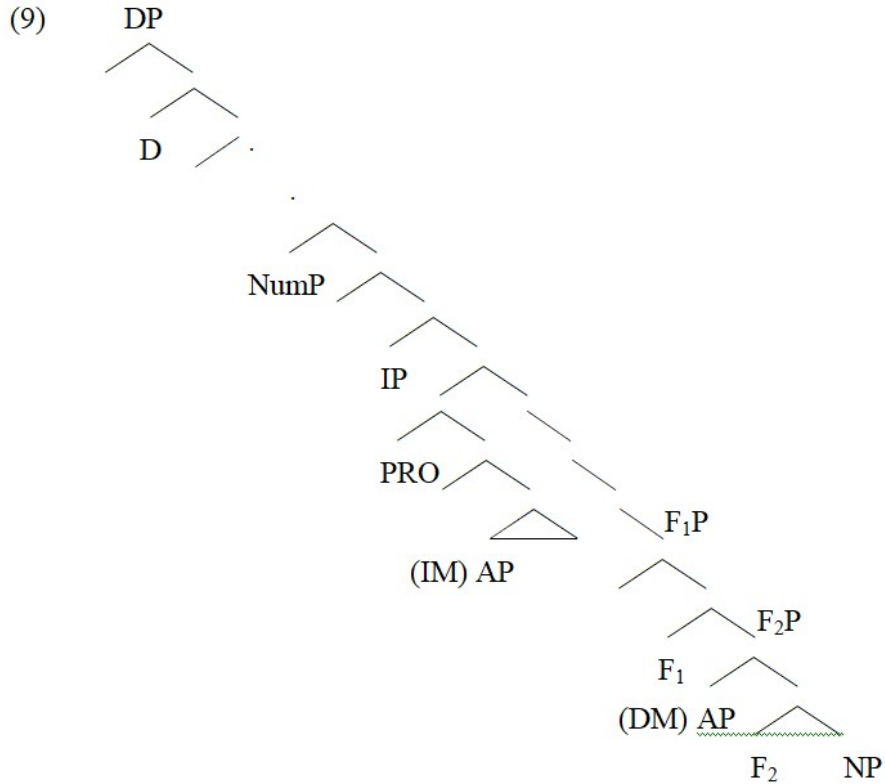
More examples of this type are presented in Marušič (2011), who shows that the class of prenumeral adjectives is not uniform (contra Cinque 2010, who claims that these are all adjectives from reduced relative clauses), as well as in Keenan (2013), (8a-b), and Maekawa (2013), (8c-d).

- (7) a. *the left three columns* (= the three columns which are on the left (side))  
b. *the upper three rows* (= the three rows which are on the upper end)
- (8) a. *a pleasant three days in Philadelphia*  
b. *He held his breath underwater for a staggering ten minutes.*  
c. *a beautiful four days in Berlin*  
d. *An estimated 3.3 million people have died as a result of the war making it the “tragedy of modern times”, according to a report issued by the International Rescue Committee aid agency.*

In what follows, we will show that the group of adjectives which can appear in front of numerals is actually quite diverse and larger than the above-mentioned observations from the previous literature would seem to suggest.

## 2. Indirect or direct modifiers?

Cinque (2010) divides adjectives in two classes and shows that they are located in two different structural positions, merged into the structure in two different ways. Direct-modification adjectives (DM As) are APs merged in the specifiers of functional heads, while indirect-modification adjectives (IM As) are reduced relative clauses (reduced RC) merged in a functional projection hosting only reduced RCs. IM adjectives are argued to be merged higher in the structure than DM adjectives (Cinque 2010), as shown in (9).



As both (5a) and (6a) are supposedly derived from reduced RCs, Cinque suggests that IM As might have more than one merging point in the structural frame of the noun phrase, and moreover, that one of these merging points is located even higher than the merging point of the numeral phrases.

Adjectives that express some sort of location/position, such as *left*, *right*, *upper*, *lower*, *northern*, *western*, etc., easily appear to the left of cardinal numerals in

English and Slovenian, (10). At least in some cases, these adjectives can also be used with ordinal numerals, in which case they seem to be located even higher than ordinal numerals, (11).

- (10) a. *levi trije stolpci* [from www] (Slovenian)<sup>11</sup>  
 left three columns  
 b. *zgornje tri vrstice* [from www]  
 upper three rows
- (11) a. *leve prve tri knjige*  
 left first three books  
 b. *zgornje prve tri alineje* [from www]  
 upper first three bullets  
 c. *the upper first four rows* [from www]

When occurring to the right of the numeral, these As typically receive a different interpretation (not location/position). When the Slovenian *desni* ‘right’ and *levi* ‘left’ are used after the numeral, they are interpreted as ‘right-wing’ and ‘left-wing’, respectively, (12).<sup>12</sup>

- (12) a. *trije desni politiki*  
 three right politicians  
 ‘three right-wing politicians’  
 b. *trije levi politiki*  
 three left politicians  
 ‘three left-wing politicians’

These adjectives cannot appear in predicative positions with their location interpretation; when used predicatively, they receive their non-locational interpretation, (13a-b). On their non-locational reading, they are acceptable in predicative position only when preceded by TA, (13c), which—in predicative position—signals the presence of a null N (cf. Marušič and Žaucer 2006, 2008). Therefore, they behave like DM As, they are not predicative adjectives, and can only modify a noun, but given their location high inside the DP—higher than cardinal and ordinal numerals—they should behave like reduced-RC adjectives.

<sup>11</sup> All subsequent non-English examples are from Slovenian.

<sup>12</sup> In addition, ‘left’ also has the meaning ‘incompetent’, so that (12b) can also mean ‘three incompetent politicians’.

- (13) a. \* *Tista tri drevesa so desna.*  
 those three trees are right  
 intended: ‘Those three trees are to the right.’
- b. ? *Ta politik je desni.*<sup>13</sup>  
 this politicians is right  
 ‘This politician is right-wing.’
- c. *Te knjige so ta desne.*  
 These books aux TA right  
 ‘These books are the right ones (the ones on the right).’

Leaning closely on Cinque (2010: 6-16), the following subsections will go through several properties with which we should be able to determine more systematically whether the pronominal adjectives are merged into the structure directly like APs or through a reduced RC.

### 2.1 Stage-level vs. Individual-level interpretation (Cinque 2010: 6)

As noted already in Bolinger (1967), when adjectives such as *visible*, *invisible*, *navigable*, etc., are used attributively, they are ambiguous between stage-level and individual-level interpretation, but when such adjectives are used predicatively, they only receive the stage-level interpretation. When we combine two adjectives of this type in pronominal position, the one receiving individual-level interpretation is located closer to the noun, (14). This leads us to conclude that the individual-level interpretation is associated with DM adjectives, which are merged closer to the noun than IM adjectives, which yield stage-level interpretation.

- (14) *the invisible visible stars*  
 ‘the (inherently) visible stars that are currently invisible due to e.g. murky sky’

When we apply this test to the class of adjectives under observation, we find that the adjectives preceding numerals seem to pattern with IM, receiving stage-level interpretation, while the post-numeral adjectives receive individual-level interpretation, thus patterning with DM, (15). Interestingly, as seen in (16), the readings for Slovenian change if we use adjectives preceded by the adjectival definite article TA (see Marušič and Žaucer 2006, 2008, 2014 for details about TA). Both pre- and postnumeral adjectives receive both types of readings, which means

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<sup>13</sup> In these cases, the adjective most likely precedes a null N. The more common way of saying ‘he is left-wing’ is with a nominalized adjective: *On je desničar* ‘He is a right-winger’.

that we find both IM and DM adjectives in both positions, i.e., both preceding and following the numerals.

- (15) a. *the wrong three answers* - stage-level – IM  
 b. *the three wrong answers* - individual-level – DM
- (16) a. *leve tri knjige* - stage-level – IM  
 left three books  
 b. *tri leve knjige* - individual-level – DM  
 c. *tri ta leve knjige* - stage-level or individual-level – IM&DM  
 three TA left books  
 d. *ta leve tri knjige* - stage-level or individual-level – IM&DM

## 2.2 Restrictive vs. Non-restrictive interpretation (Cinque 2010: 7)

As also noted already in Bolinger (1967), certain adjectives are ambiguous between the restrictive and the non-restrictive interpretation when used in prenominal position. When used postnominally, these adjectives only allow a restrictive reading, and the latter is also associated with the same adjectives used in relative clauses; therefore, restrictive interpretation suggests IM, non-restrictive interpretation suggests DM. If we apply this test to our adjectives, (17), we see that when occurring prenumerally, they pattern with IM, while they seem to be ambiguous when occurring postnumerally. We found the presence of the adjectival definite article TA to have no influence on these readings.

- (17) a. *tri leve knjige* - restrictive & non-restrictive  
 three left books
- b. ? *leve tri knjige* - restrictive  
 ‘the three books which are on the left’
- c. *tri ta leve knjige* - restrictive & non-restrictive  
 three TA left books
- d. ? *ta leve tri knjige* - restrictive  
 ‘the three books which are on the left’

## 2.3 Modal vs. implicit relative clause reading (Cinque 2010: 8)

It had been noted that when used prenominaly, adjectives like *possible* are ambiguous between a modal reading (‘potential’) and an implicit relative clause reading with antecedent contained deletion; postnominally, these adjectives only allow the implicit relative clause reading, (18a-b).

- (18) a. *Mary interviewed every possible candidate.*  
i. 'every potential candidate'  
ii. 'every candidate that it was possible for her to interview'  
b. *Mary interviewed every candidate possible.*  
i. # 'every potential candidate'  
ii. 'every candidate that it was possible for her to interview'
- (Cinque 2010)

Testing for this distinction within the prenominal context with respect to prenumeral vs. postnumeral positions, Cinque claims that *possible* receives an implicit relative clause interpretation only prenumerally, as in (19a), suggesting that we find IM adjectives preceding numerals and DM adjectives following numerals.

- (19) a. *She always goes to see every possible first two games.*  
b. *She always goes to see every first two possible games.* (Cinque 2010)

We find these judgements to be less clearly distinct in Slovenian. As shown in (20), both prenumeral and postnumeral position seems to license both IM and DM adjectives.

(20)

- a. *Marija je izprašala možne prve tri kandidate.* DM & IM  
Marija aux interviewed possible first three candidates  
i. 'M. interviewed the first 3 candidates that it was possible for her to interv.'  
ii. 'M. interviewed the first 3 potential candidates.'
- b. *Marija je izprašala prve tri možne kandidate.* DM & IM  
Marija aux interviewed first three possible candidates  
i. 'M. interviewed the first 3 candidates that it was possible for her to interv.'  
ii. 'M. interviewed the first 3 potential candidates.'

#### **2.4 Intersective (IM) vs. Nonintersective (DM) (Cinque 2010: 9)**

Another familiar ambiguity of attributive adjectives is that of intersective and nonintersective interpretations. In (21), *beautiful* can either have the intersective interpretation (Olga is both a dancer and she is beautiful) from (i) or the non-

-intersective interpretation (Olga need not be beautiful, beautiful refers to her dancing) from (ii).

(21) *Olga is a beautiful dancer.*

- i. ‘Olga dances beautifully’ - non-intersective = DM
- ii. ‘Olga is a dancer and she is beautiful’ - intersective = IM

Testing for this property on pronominal adjectives, we can see that pronominally, the only interpretation available is the intersective one, while postnumerally, both are available, (22).

(22) a. *Videl sem tri (ta) čudovite plesalce.* - IM & DM

saw-I aux three TA wonderful dancers

‘I saw three beautiful dancers.’

b. *Videl sem ta čudovite tri plesalce.* - IM

saw-I aux TA wonderful three dancers

‘I saw the beautiful three dancers.’

## 2.5 Relative to a comparison class (IM) vs. Absolute (DM)

(Cinque 2010: 10)

As described by Cinque (2010), attributive adjectives are ambiguous in that they can receive either an absolute interpretation, or else can be understood relative to a comparison class. The noun phrase in (23) can thus refer to an elephant that is small for elephants (relative to a comparison class) or it can refer to an elephant that is small in absolute terms (e.g. a toy elephant).

(23) *a small elephant*

Looking at pronominal adjectives, we observe that both interpretations are available in both positions. With the adjective ‘big’ following the numeral, as in (24b), the noun phrase can either refer to a group of 4 persimmons that are big for persimmons or to a group of four persimmons that are big in absolute terms. Similarly, with the adjective preceding the numeral, as in (24a), we can either be

referring to a big unit of 4 persimmons or to a unit of four persimmons that is big for units of four persimmons.

- |      |    |                             |         |
|------|----|-----------------------------|---------|
| (24) | a. | <i>veliki štirje kakiji</i> | IM & DM |
|      |    | big four persimmons         |         |
|      | b. | <i>štirje veliki kakiji</i> | IM & DM |
|      |    | four big persimmons         |         |

## 2.6 Evaluative (DM) vs. Epistemic (IM) reading of ‘unknown’ (Cinque 2010: 14)

Cinque discusses the difference between evaluative and epistemic readings of the adjective ‘unknown’. He observes that the sentence in (25) has both the reading from (i) and the reading from (ii). The reading in (i) is associated with indirect modification, while the reading in (ii) is associated with direct modification.

- |      |   |
|------|---|
| (25) | <i>Mary lives in some unknown village.</i>                |
|      | i. ‘It is not known in which village’ – IM                |
|      | ii. ‘The village, where she lives is not well-known’ – DM |

As shown in (26), when Slovenian *neznán* “unknown” follows the numeral, it is ambiguous between the two readings, so the postnumeral position – as expected – hosts both indirect and direct modifiers. But when *neznán* appears prenumerally, only the indirect modification reading seems to survive. If using *neznán* “unknown” with *ta*, the direct modification interpretation is the only one available in both prenumeral and postnumeral positions.

- |      |    |  |          |
|------|----|--|----------|
| (26) | a. | <i>prebrala je neznane tri romane</i>    | IM       |
|      |    | read aux unknown three novels            |          |
|      | b. | <i>prebrala je tri neznane romane</i>    | IM or DM |
|      | c. | <i>prebrala je ta neznane tri romane</i> | DM       |
|      |    | read aux TA unknown three novels         |          |
|      | d. | <i>prebrala je tri ta neznane romane</i> | DM       |



## 2.7 NP-dependent (DM) vs. Discourse Anaphoric (IM) reading of ‘different’ (Cinque 2010: 15)

Another adjective that has two readings associated with two types of modification, according to Cinque (2010), is *different*. The so-called NP-dependent reading from (27i) is a result of direct modification, whereas the discourse Anaphoric reading from (27ii) arises from indirect modification.

(27) *Detmar and Kordula live in different cities.*

- |   |    |
|---|----|
| i. ‘Detmar lives in a different city from Kordula’                  | DM |
| ii. ‘D & K live in a city that is different from some salient city’ | IM |

The same ambiguity is observed with Slovenian adjectives *drugačen* “different” and *isti* “same”, as shown in (28).

- (28) a. *Peter in Metka bereta drugačne knjige.*  
 Peter and Metka read different books  
 i. ‘Peter reads different books from Metka.’  
 ii. ‘P&M read books that are different from some salient books.’
- b. *Peter in Metka bereta iste knjige.*  
 Peter and Metka read same books  
 i. ‘Peter reads the same books as Metka.’  
 ii. ‘P&M read books that are the same as some salient books.’

Going to pronominal adjectives, we observe that ‘different’ and ‘same’ reveal this ambiguity both in pronominal and postnominal positions.

- (29) a. *Peter in Metka sta prebrala tri drugačne knjige.* IM & DM  
 Peter & Metka aux read 3 different books  
 ‘Peter and Metka read 3 different books.’
- b. *Peter in Metka sta prebrala iste tri knjige.* IM & DM  
 Peter & Metka aux read same 3 books  
 ‘Peter and Metka read 3 different books.’
- c. *Peter in Metka sta prebrala ta iste tri knjige.* IM & DM  
 Peter & Metka aux read TA same 3 books  
 ‘Peter and Metka read 3 different books.’

## 2.8 Recap

In the preceding subsections we saw that for the most part prenumeral adjectives behaved like indirect modifiers while postnumeral adjectives were ambiguous as expected. In some cases, direct modifiers also preceded the numeral; this was observed in sections 2.3, 2.5, 2.6, and 2.7. In these cases both pre- and postnumeral positions were able to host both direct and indirect modification adjectives. Unlike what is concluded about such adjectives in Cinque (2010), we take the availability of both types of adjectives in both positions as the norm.

Finding direct modification adjectives in prenumeral positions is not surprising if they are hosted in their expected positions within a (partially) repeated *f*-sequence, i.e. a binominal structure. Obviously, if we are talking about a binominal structure with two *f*-sequences and thus two positions for both direct and indirect modifiers, we will need to explain why we do find cases where direct modification adjectives in prenumeral position does not seem to be available, as is the case in 2.4. We believe that the absence of prenumeral direct modification adjectives in those cases is not unexpected on our proposal, although for reasons of space, we will have to leave a demonstration of this claim for another occasion.

## 3. Adjectives to the left of numerals are...

### 3.1 Detour: Possessive Adjectives

Before we proceed to our proposal, let us have a look at another class of adjectives that can appear both before and after the numeral with a clear interpretational difference. When a possessive adjective, such as *Martini* ‘Marta’s’, appears after the numeral, as in (30a), the entire noun phrase refers to three children that are all in some way related to Marta (say, Marta is their mother, their school teacher, their baby-sitter, etc.). But when such a possessive adjective appears before the numeral, as in (30b), there is an additional presupposition that Marta only has three children (i.e., she is the mother/school teacher/baby-sitter/etc. of three and only three).

- (30) a. *trije Martini otroci*                      b. *Martini trije otroci*  
         three Marta’s kids                      Marta’s three kids  
         ‘three kids of Marta’s’                      ‘Marta’s three kids’

This “exhaustive” reading is not absolute but linked to a context, so for example, in a context where Marta has three kids, (31) below is nevertheless perfectly fine as long as Marta’s third kid no longer goes to school and is thus outside of the relevant context.

- (31) *V šoli sta manjkala Martina dva otroka.*  
 In school aux lacked Marta's two kids  
 ‘Marta’s two kids were absent from school.’  
 = ‘The two kids of Marta’s that go to school were absent from school.’

As shown in (32), the same interpretational difference is observed also with possessive pronouns. When a possessive pronoun like *svoj* “one’s own” precedes a numeral like ‘two’, as in (32b), the presupposition is that Peter only has two classmates. When it follows the numeral, however, there is no such presupposition.

- (32) a. *Peter je srečal dve svoji sošolki.*  
 Peter aux met two one’s-own classmates  
 ‘Peter met two classmates of his.’  
 b. *Peter je srečal svoji dve sošolki.*  
 Peter aux met one’s-own two classmates  
 ‘Peter met his two classmates.’

Interestingly, the same type of interpretational difference is also found in cases like (33), where the quantity is not expressed with a numeral but with a noun (the numeral in (33) is a noun). Here too the interpretation of (33b) is that Marta is the mother of three kids, while in the case of (33a), she could have more than three kids.

- (33) a. *trojica Martinih otrok*      b. *Martina trojica otrok*  
 triplet Marta’s kids                  Marta’s triplet kids  
 ‘A triplet of Marta’s kids’              ‘Marta’s triplet of kids’

We believe that (30b) and (33b) are not comparable only in their interpretation but also in their structure. We submit that in (30b), the numeral-noun complex essentially acts as a noun. The structure we propose involves a null noun, as shown in (34). This null noun takes the lower noun phrase as its complement. This proposal is quite close to Keenan (2013), although as we will explain in subsequent sections, some of the details differ.

- (34) Marta’s [<sub>NP</sub> N<sub>NULL</sub> [three kids]]

### 3.2 Locational adjectives etc.

We said above that locational adjectives like ‘left’ or ‘right’ appear before the numeral. This is just part of the story, however, since they can in fact also appear *after* the numeral, (35).

- |      |    |   |  |
|------|----|---|--|
| (35) | a. | <i>levi trije stolpci</i><br>left three columns | b. <i>trije levi stolpci</i><br>three left columns |
|      | c. | <i>zgornja dva zobka</i><br>upper two teeth     | d. <i>dva zgornja zobka</i><br>two upper teeth     |

Again, the two orders show a clear interpretational difference, comparable to the one observed above with possessives. When the adjective precedes the numeral, we get the exhaustive interpretation: in (35c) there are only two teeth that are *upper*. On the other hand, when the adjective is used after the numeral, there can be other *upper* teeth. In this case the adjective is interpreted as a type adjective.

- |      |    |  |
|------|----|--|
| (36) | a. | <i>ta zgornja dva kozarca</i><br>TA upper two glasses<br>‘the two unique glasses that are somewhere high’  |
|      | b. | <i>dva ta zgornja kozarca</i><br>two TA upper glasses<br>‘two glasses that have some sort of a predefined property of being ‘zgornji’ – no uniqueness involved |

Again in parallel to what we saw above with possessives, the uniqueness/exhaustive reading is linked to context, so that (37) is fine in a context where the person has more than the two upper teeth as long as we had agreed to extract only two (and some lower ones). In parallel to the structure proposed in the context of possessive adjectives in (34), these case will thus have the structure in (38).

- |      |  |
|------|--|
| (37) | <i>Zgornja dva zoba smo že spulili.</i><br>upper two teeth aux already extracted<br>‘We have already extracted the upper two teeth.’ |
|------|--|

- |      |  |
|------|--|
| (38) | upper [ <sub>NP</sub> N <sub>NULL</sub> [two teeth]] |
|------|--|

### 3.3 The wrong GROUP OF

A parallel situation holds with other similar cases. As shown in (39) below, these examples are easily paraphrasable with a noun like *group* between the adjective and the following numeral. So if the adjective *wrong* precedes the two numerals, we are talking about the group of first three answers. If the adjective *wrong* follows *first* and precedes *three*, the appropriate paraphrase involves the noun *group* again following *wrong* and preceding the second numeral.

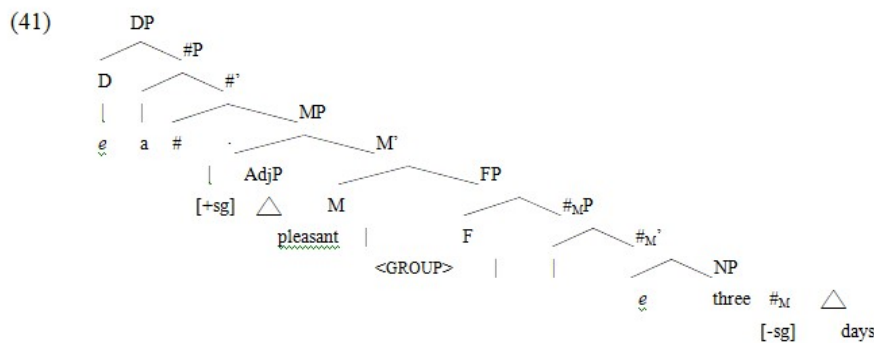
- (39) a. *the wrong GROUP OF first three answers*  
 b. *the first wrong GROUP OF three answers*  
 c. *the first three wrong answers*

### 3.4 Partitives and pseudopartitives

Keenan (2013), among others, discusses a set of examples that is close to the ones presented above, such as (40), dubbing the construction AANN (Article + Adjective + Number + Noun).

- (40) a. *a pleasant three days in Philadelphia*  
 b. *I ate a delicious three courses at my friend's restaurant this evening.*  
 (Keenan 2013: 87-89)

According to Keenan (2013), examples of her construction obligatorily exhibit an indefinite article (which is not a D element), an adjective and an internal indefinite number phrase, and the construction is said to (typically) occur with nouns that measure. Keenan claims that these cases represent a pseudopartitive construction and proposes the structure in (41).



The construction seems comparable to the Slovenian cases we presented in the previous sections, although its properties – at least as they are reported in Keenan (2013) – partly differ from those of the Slovenian cases from above. Specifically, unlike what is reported by Keenan for her AANN, the Slovenian cases do not require the entire DP to be indefinite, the internal NP does not need to have a noun that measures, and when the noun-modifying numeral is ‘two’, ‘three’ or ‘four’, singular agreement on the verb is impossible.

Although Keenan’s (2013) intuition that the higher adjective modifies a null N appears to be on the right track also for the Slovenian cases, trying to simply apply her proposal may prove problematic. In Slovenian partitive and pseudopartitive constructions, the lower noun always carries genitive, (42). As shown in (43), this holds even when the partitive element is not present in overt syntax.

- (42) a. *zbirka unih zgodbic*  
collection those stories  
‘a collection of those stories’
- b. *zbirka zgodbic*  
collection stories  
‘a collection of stories’
- c. *zbirka desetih zgodbic*  
collection ten stories  
‘a collection of ten stories’
- (43) a. *Prinesel mi je kave.*  
brought me aux coffee  
‘He brought me some coffee.’
- b. *Črt je prinesel ta malo košaro breskev, Jan pa ta veliko hrušk.*  
Črt aux brought TA small basket peaches Jan PTCL TA big pears  
‘Črt brought a small basket of peaches, while Jan brought a big basket of pears.’

In contrast, prenumeral adjectives do not trigger genitive on the following noun, as shown in (44), so the close parallel between the prenumeral-adjective construction and (pseudo)partitives that the application of Keenan’s (2013) analysis would establish does not appear to hold up.

- (44) a. *napačni prvi trije odgovori*  
wrong<sub>NOM.PL</sub> first<sub>NOM.PL</sub> three<sub>NOM.PL</sub> answers<sub>NOM.PL</sub>  
‘the wrong first three answers’
- b. \* *napačni prvi treh odgovorov*  
wrong<sub>NOM.PL</sub> first<sub>NOM.PL</sub> three<sub>GEN.PL</sub> answers<sub>GEN.PL</sub>

We should note that Keenan (2013: 95) does mention that even in English, her constructions with pronominal adjectives lack *of*, the usual case marker from partitive and pseudopartitive constructions, suggesting that *of* is a “case marker between two overt nominals” and that with the upper nominal unpronounced, there is no need for an overt mediator. However, as we have shown in (44), absence of an overt partitive element does not void the requirement for genitive on the lower noun in Slovenian, which suggests that the structure of our pronominal-adjective construction must be at least minimally different from the structure of standard (pseudo)partitives. In 3.6 below, we will propose a binominal structure with a partially repeating *f-seq* under a single DP.

### 3.5 More on case and agreement

Agreement properties of our construction can be seen as a piece of evidence for the claim that the construction has a mono-DP structure. Looking at our adjectives that precede the numeral, we see that they agree with the noun, just like adjectives following a numeral, (45)-(46). In addition to adjectives, other elements that precede the numeral, such as demonstratives and the universal quantifier, exhibit such agreement as well, (47).

(45)

- |    |  |    |  |
|----|--|----|--|
| a. | <i>šest levih stolpcev</i>                           | b. | <i>levih šest stolpcev</i>                           |
|    | six left <sub>GEN.PL</sub> columns <sub>GEN.PL</sub> |    | left <sub>GEN.PL</sub> six columns <sub>GEN.PL</sub> |
|    | ‘six left-hand columns’                              |    | ‘left-hand six columns’                              |

(46)

- |    |   |    |   |
|----|---|----|---|
| a. | <i>trije zgornji zobki</i>  | b. | <i>zgornji trije zobki</i>  |
|    | three <sub>NOM.PL</sub> upper <sub>NOM.PL</sub> teeth <sub>NOM.PL</sub> |    | upper <sub>NOM.PL</sub> three <sub>NOM.PL</sub> teeth <sub>NOM.PL</sub> |
|    | ‘three upper teeth’   |    | ‘upper three teeth’   |

(47)

- |    |  |
|----|--|
| a. | <i>tistih pet rdečih avtomobilov</i>                                   |
|    | those <sub>GEN.PL</sub> 5 red <sub>GEN.PL</sub> cars <sub>GEN.PL</sub> |
|    | ‘those 5 red cars’   |

- b. *vseh 7 dirkalnih biciklov*  
 all<sub>GEN.PL</sub> 7 racing<sub>GEN.PL</sub> bikes<sub>GEN.PL</sub>  
 ‘all 7 racing bikes’
- c. *vsi trije dirkalni konji*  
 all<sub>NOM.PL</sub> 3 racing<sub>NOM.PL</sub> horses<sub>NOM.PL</sub>  
 ‘all 3 racing horses’

Assuming, uncontroversially, that the postnumeral adjectives above are part of the noun phrase of the head noun, we take this parallelism between agreement in prenumeral and postnumeral adjectives as suggestive of the fact that the cases with prenumeral adjectives also represent constructions with a single set of the higher parts of the extended nominal projection.<sup>14</sup>

#### 4. The structure

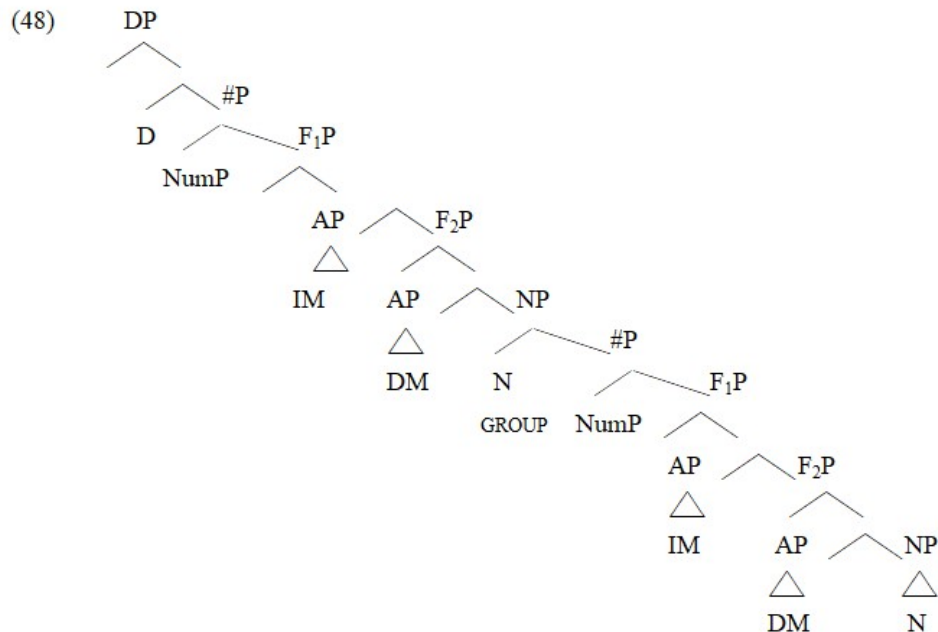
To capture the characteristics of our prenumeral-adjective construction described in the previous sections, we propose a binominal structure with a partially repeating *f-seq* under a single DP, as in (48). The two instantiations of the *f-seq* are connected by a null noun; given that our prenumeral-adjective cases do not seem to be limited to meanings of measure, we do not encode this by making the null noun a quantity/measure noun (unlike Keenan (2013)), but rather see it as carrying a broader meaning close to that of ‘group’. Whereas both *f-seqs* seem incomplete, they nonetheless both have number marking and both have the relevant adjective-

<sup>14</sup> There exist cases where agreement does not carry from the noun over the numeral to the adjective, (i), with the prenumeral adjective exhibiting a constant, nonagreeing adverbial-like morphology. From what we can tell, there is no semantic difference between cases where prenumeral adjectives carry this type of “adverbial” agreement and their counterparts in which the adjective agrees with the noun, (ii). This type of “adverbial” agreement can also be found with other type of prenumeral elements, and has also been noticed in Russian (Babby 1985). At this point, we do not know what to make of this pattern.

- (i)
- |   |   |
|---|---|
| a. <i>leve dva kabla</i><br>left <sub>ADV</sub> two <sub>NOM.DU</sub> cables <sub>NOM.DU</sub><br>‘left two cables’ | b. <i>z leve dveh kablov</i><br>from left <sub>ADV</sub> two <sub>GEN.DU</sub> cables <sub>GEN.DU</sub><br>‘from the left two cables’ |
|---|---|
- (ii)
- |  |   |
|--|---|
| a. <i>leva dva kabla</i><br>left <sub>NOM.DU</sub> two <sub>NOM.DU</sub> cables <sub>NOM.DU</sub><br>‘left two cables’ | b. <i>z levih dveh kablov</i><br>from left <sub>GEN.DU</sub> two <sub>GEN.DU</sub> cables <sub>GEN.DU</sub><br>‘from the left two cables’ |
|--|---|



hosting projections (as we saw that both types of adjectives are possible both before and after the numeral).



As has been amply demonstrated above, the construction can exhibit a numeral between the two sets of adjectives; indeed, this type of data constituted our point of departure. In the proposed structure, this numeral is hosted in the #P between the two sets of adjective-hosting FPs. If above the #P, the *f-seq* restarts with a new adjective-hosting F<sub>2</sub>P, we expect that (unless there is further restarting) it will then continue with all the F<sub>2</sub>P-dominating projections of the *f-seq*, including a #P dominating the second set of adjective-hosting FPs. If so, we predict that it will be possible to have a numeral above the higher set of adjectives as well. Whereas this may not be obviously the case, it seems to us that the ‘problem’ with such cases is more one of imagining a suitable context for the use of such a string; but if a suitable context is invoked, this does seem to be possible. Imagine a stack of ten bookshelves, from which I want to get the leftmost three books from three of the shelves; or imagine an excel file with multiple spreadsheets for two of which, or for the first two of which I want the leftmost two columns filled in. In such contexts, (49) and (50) seem possible.<sup>15</sup>

<sup>15</sup> For some speakers, the first numeral in (46) would preferably be substituted for by *troje* ‘three’, which is a form of the numeral used for counting the groups when partitioning regular plurals into

- (49) *A mi daš tri ta leve tri knjige?*  
 Q I<sub>DAT</sub> give<sub>2P</sub> three<sub>ACC</sub> TA left<sub>ACC</sub> three<sub>ACC</sub> books<sub>ACC</sub>  
 ‘Can you pass me three of the left three-book sets?’
- (50) a. *V excel fajlu moraš izpolniti dva leva dva stolpca.*  
 in Excel file must<sub>2P</sub> fill-in<sub>INF</sub> two<sub>ACC</sub> left<sub>ACC</sub> two<sub>ACC</sub> columns<sub>ACC</sub>  
 ‘You need to fill in the left two columns in two of the spreadsheets.’
- b. *V excel fajlu moraš izpolniti prva dva leva dva stolpca.*  
 in Excel file must<sub>2P</sub> fill-in<sub>INF</sub> first<sub>ACC</sub> two<sub>ACC</sub> left<sub>ACC</sub> two<sub>ACC</sub> columns<sub>ACC</sub>  
 ‘You need to fill in the left two columns in the first two spreadsheets.’

We should also mention that as can be seen from (49)-(50), the two numerals must be of the same grammatical number; in (49), both numerals are plural, and in (50), they are both dual. Although all three examples in (49)-(50) in fact contain two instances of the very same numeral, the restriction is actually to the same grammatical number, not to the same numeral, so that a combination of, say, ‘four’ and ‘three’, which both require plural agreement, is fine: for example, (49) is fine also with *štiri ta leve tri knjige* ‘four TA left three books’. However, a combination such as *tri leva dva stolpca* ‘three left two columns’, in which ‘three’ requires plural and ‘two’ requires dual, is not possible. Given that the proposed structure contains just one DP, the fact that the construction exhibits the restriction on agreeing grammatical number need not be surprising; it is in line with the fact that there must be concord/agreeing gender, number and case throughout any DP.

One aspect of our proposed structure that may leave doubts is the fact, mentioned in section 3.4 above, that unlike in (pseudo)partitives, the overt/bottom noun of our prenumeral-adjective construction does not surface in the genitive. As section 3.4 showed, the bottom noun of Slovenian (pseudo)partitives is genitive-marked even when the partitive element is covert. Given that the structure in (48) contains a null noun, we might expect the overt/bottom noun to surface in genitive case, contrary to fact. We see two avenues that can be pursued in order to find an answer to this puzzle. One is related to the nature of the null noun, that is, to the claim that unlike in the proposal advanced for her AANN in Keenan (2013), the null noun in (48) is

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groups, as in *troji stoli* (three<sub>PL,NOM</sub> chair<sub>PL,NOM</sub>) ‘three (contextually defined) groups of chairs’ vs. *trije stoli* (three<sub>PL,NOM</sub> chair<sub>PL,NOM</sub>) ‘three chairs’, or *troji čevlji* (three<sub>PL,NOM</sub> shoe<sub>PL,NOM</sub>) ‘three pairs of shoes’ vs. *trije čevlji* (three<sub>PL,NOM</sub> shoe<sub>PL,NOM</sub>) ‘three shoes’ (for many speakers, this is also the only numeral form used with pluralia-tantum nouns, such as *vrata* ‘door’). If the meaning of the bottom part of our prenumeral-adjective construction is, as we suggest, always something along the lines of *group*, such a preference is not surprising.

not a measure noun whose complement would naturally be expected (in Slovenian) to carry genitive, the standard case of quantification, but rather a noun with a broader meaning close to that of ‘group’. This may do the trick, although we acknowledge the worry that regardless of quantification, the default case of noun complements is also genitive and so regardless of the nature of the null noun in (48), we might expect the overt noun to surface in the genitive. The other option that comes to mind is a version of (48) that does away with the null noun, and retains only a restarted *f-seq*, along the lines of the “inflectional shells” that Bjorkman and Cowper (2013) have proposed in their analysis of the English causative *have*, with a restarted *f-seq* above VoiceP: [TP [EventP [VoiceP [EventP [VoiceP [VP]]]]]]. The fact that the interpretation turns out to be one of ‘group’ may not be problematic, such an interpretation may actually be derivable from the mere fact that there is a higher-level adjective modifying a lower part comprising a quantified structure of numeral and noun. We must leave this issue for future work.

## 5. Conclusion

We discussed a group of adjectives which precede numerals in prenominal position and thus challenge both Greenberg’s (1963) crosslinguistic generalizations and Cinque’s (2005) influential theory. Leaning closely on tests from Cinque (2005), we argued that in general both prenumeral and postnumeral positions allow direct and indirect modification, and proposed to account for this by positing a partially restarted *f-seq*. Although we said that our proposal is different from Keenan’s (2013) proposal for AANN, they share many similarities. Both propose an essentially binominal structure with two nouns (one null) heading two *f-seqs*, though under a single DP. Keenan’s higher, null noun is deficient and does not even sit in a regular NP but in a *Measure* phrase, and so the *f-seq* above it also does not contain all of the FPs that are found in the lower *f-seq*. In our version, the *f-seq* dominating the null noun is not deficient. The basic possibility for deriving prenumeral adjectives is shared by both version, though having a deficient versus a full-fledged higher *f-seq* results in different predictions. We showed that our account is supported by data even with respect to some predictions that at first sight seem false, such as the co-occurrence of two numerals. On both analyses, we may be faced with the problem of why the lower noun of our prenumeral-adjective construction does not surface in the genitive.

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**DPS, IPS AND (MULTIPLE) WH-FRONTING**<sup>17</sup>

**Abstract:** The paper builds on previously observed parallels between the clausal and the nominal domain. It is shown that, in Slovenian, despite some similarities in instances with one *wh*-phrase, (i.e. a single *wh*-element typically precedes all other items in the clause and the DP, but if a *wh*-element appears in situ, it is linked to an echo interpretation), the clausal and the nominal domain differ with respect to multiple *wh*-fronting. Specifically, while multiple *wh*-fronting is available in the clausal domain, it is prohibited in the nominal domain in Slovenian. Even more, there is a general prohibition against multiple *wh*-words in the DP, the exception being *wh*-phrases with *koliko* ‘how-many/much’, i.e. only *koliko* can appear with another *wh*-element in the Slovenian DP (with *koliko* preceding all other elements). Furthermore, it is shown that in a *wh*-question, a focused phrase and a *wh*-phrase can cooccur in any word order. On the other hand, in the nominal domain the *wh*-word must precede the focused word. While it is assumed that in the IP *wh*-phrases undergo focus movement, it is argued that, while focus movement is possible in the DP, movement of *wh*-modifiers to SpecDP is motivated by the definiteness feature. The prohibition against multiple *wh*-fronting in the nominal domain is linked to definiteness as Slovenian seems to be one of the languages that do not allow multiple definite items in a phrase. The described behavior of *wh*-items in the clausal and the nominal domain in Slovenian shows that the IP and the DP are not completely parallel.

**Key words:** *wh*-fronting, *wh*-phrase, nominal domain, clause, Slovenian.

**0. Introduction**

It has been established for quite some time now that clausal domain and nominal domain exhibit parallel behavior (e.g. Chomsky 1970, Abney 1987, Szabolcsi

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1994, etc.). These similarities have been observed with respect to availability of different projections in the cartographic sense (e.g. Giusti (1996) shows that DPs have a fine structure with a focus and a topic projection, which is similar to the left periphery of the clause in Rizzi (1997)) and more recently with respect to phases. Bošković (2008b), for example, claims that CP is a phase but IP is not, and DP is a phase while NP is not (based on Chomsky 2000). These similarities suggest that one might find the same constructions in both projections.

It is well known that multiple *wh*-fronting exists in the clausal domain in Slavic languages (Slovenian, Serbo-Croatian, Bulgarian, etc.) and given the similarities in the behaviour of the clausal and the nominal domain, it is worth asking whether multiple *wh*-fronting is also possible in the DP. I will use Slovenian as an example of multiple *wh*-fronting language, in which movement proceeds to the IP, to show that multiple *wh*-fronting is not possible in the nominal domain. The difference in the availability of multiple *wh*-fronting in a sentence and the nominal domain is then an instance of the lack of parallelism between the IP and the DP.

The paper proceeds as follows: Section 1 is an overview of the structure of DPs in Slovenian as the main source of the data. I compare the behaviour of the clausal and the nominal domain with respect to *wh*-fronting in section 2. Section 3 summarizes some of the facts about multiple *wh*-fronting in Slovenian, while section 4 focuses on *wh*-movement in the DP. Section 5 concludes the paper.

## **1. Some notes about the structure of the nominal domain in Slovenian**

Since *wh*-movement in the DP is in the center of this paper, I start with a short description of the nominal domain in Slovenian. Slovenian is a language without a definite, but with an indefinite article:

- (1)    En        fant    je        kupil            en        šal.  
      a        boy    is        bought         a        scarf

‘A boy bought a scarf.’

There are two different analyses for languages without a definite article. The analysis which proposes a DP layer also for languages without a determiner is argued for by Progovac (1998) and Pereltsvaig (2007). In this view the determiner is phonologically null. Bošković (2008a) on the other hand argues that in languages that do not have an overt determiner, such as Serbo-Croatian (SC), Russian, etc.,



there is no DP layer, but rather just an NP layer. Despite the indefinite article, Bošković (2008b) analyses Slovenian as an NP language. In this analysis the indefinite article is located below DP – either in a projection above NP (which would not be DP) or it is treated treating it like an adjective (Bošković 2008b: fn. 19). Contrary to Bošković, I assume that a DP layer is can be present in Slovenian and I will show that *wh*-modifiers move to SpecDP (see section 4).<sup>18</sup>

Moving on to the modifiers in the DP, in Slovenian the modifiers of the N are located to the left of the N and the most common word order is: Dem> Num> A. There are two kinds of numerals in Slovenian ordinal and cardinal (typically in this word order), as shown in (2) below. Also, there are many different types of adjectives, which are positioned to the left of the noun and which come in a fairly fixed hierarchy (which I will not be discussing in detail here). I will be using three different types of adjectives – a possessive adjective, an adjective of color and an adjective of origin. All of these agree in gender, number and case with the noun. I give one example of this in (3), while (4) shows the underlying word order of modifiers in the DP.

- (2) Prvih pet finalistov  
 firstORD fiveCARD finalists
- (3) Majin črn italijanski škorenj  
 Maja's.M.NOM.SG. black.M.NOM.SG. Italian.M.NOM.SG.boot.M.NOM.SG.
- (4) Dem>Num>A POSSESSOR>A COLOR>A ORIGIN/NATION > N

The modifiers of the noun can be questioned with a *wh*-word. The three types of adjectives that I am using can be questioned with different *wh*-words, which will help us understand the *wh*-extraction of these adjectives. The *wh*-words are: *kakšen* ‘what kind of’ for questioning color, *kateri* ‘which’ to question the origin and *čigav* ‘whose’ to question the possessive adjective. In addition, the two numerals have different corresponding *wh*-words: *kateri* ‘which’ for ordinal numerals and *koliko* ‘how many/much’ for cardinality. Demonstratives are questioned with *kateri*

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<sup>18</sup> In light of the question about the availability of the DP layer in languages that do not have a definite article – such as Slovenian (see for example Bošković 2008a) – the puzzle of the internal structure of *which*-phrases becomes especially interesting. For languages such as English, it is assumed that *which* is a determiner and that it is located in the DP. The question is if this is also true for Slovenian counterparts of *which*, such as *kateri* ‘which’. If there is no DP layer, where is *kateri* ‘which’ located? I return to this question in section 4.

‘which’. These *wh*-adjectives agree with the noun.<sup>19</sup> The example in (5) illustrates the agreement between the non-*wh*-adjectives and a *wh*-adjective with the noun (5) (cf. the agreement in (3)). In (6) all *wh*-words are listed in the underlying word order.

- (5) Čigavi                      črni                      italijanski                      škornji  
       whose M.NOM.PL      black.M.NOM.PL.    Italian.M.NOM.PL.    boot.M.NOM.PL.
- (6) kateri      kateri                      koliko                      čigavi      kakšni                      kateri      N  
       whichDEM    whichORD                      how-manyCARD    whose    what-kind-of                      which      N

Other word orders of adjectives have a marked reading, so the word order in (4) is used as the basic word order throughout the paper. As we will see, the word order in (4) is however different (but still has an unmarked reading) when a *wh*-element is present in the DP. This is explored in the next section.

## 2. *Wh*-elements in the sentence and in the nominal domain

In this section I compare the behaviour of *wh*-elements in the clause and in the nominal domain. The focus of this section is the data, while the discussion will follow in the next sections.

### 2.1 One *wh*-phrase moves

In a sentence, the *wh*-phrase moves to the left periphery. When it does, a true question reading is obtained. This is shown in (7) for an argument *wh*-phrase and in (8) for an adjunct *wh*-phrase.<sup>20</sup>

- (7) Komu je Anže skuhal večerjo?  
       whoDAT is Anže cook dinner  
       ‘Who did Anže cook the dinner for?’
- (8) Kdaj je Anže skuhal večerjo?  
       When is Anže cook dinner  
       ‘When did Anže cook the dinner?’

<sup>19</sup> I use the terms ‘*wh*-adjectives’ and ‘*wh*-modifiers’ in order to make a distinction between elements that are fronted in the DP, and *wh*-phrases (*wh*-pronouns or D(iscourse)-linked phrases) which move in the sentence.

<sup>20</sup> A *wh*-phrase can stay in situ in echo questions, but I am leaving these aside in this paper as this goes beyond the scope of this paper.

In the DP, the *wh*-adjective typically appears at the left edge of the phrase. This is shown below for the *wh*-expressions for a possessive adjective, (9), an adjective of color, (10), and an adjective of origin, (11). It is also possible to front the demonstrative, (12), or the numeral, (13), of the DP. These *wh*-DPs then, as a whole, also move to the beginning of the sentence. This movement results in a true question reading. I give a possible answer to the question in brackets.

- (9) Čigave črne italijanske škornje nosi Alina? (Majine.)  
 whose black Italian boots wear Alina? (Maja's.)  
 'Whose black Italian boots is Alina wearing?'
- (10) Kakšne Majine italijanske škornje si si sposodil?  
 (Črne.)  
 what-kind-of Maja's Italian boot REFL are borrow  
 (Black)  
 'What kind of Maja's Italian boots did you borrow?'
- (11) Katere Majine črne škornje si želi Alina? (Italijanske.)  
 which Maja's black boots REFL wish Alina (Italian.)  
 'Which Maja's black boots does Alina wish to have?'
- (12) Katero prvo nemško izdajo si prebral? (Tisto.)<sup>21</sup>  
 which first German edition are read (That one.)  
 'Which first German edition did you read.'
- (13) Katero nemško izdajo Hobita si prebral? (Prvo.)  
 which German edition Hobbit are read (The first one.)  
 'Which German edition of Hobbit did you read?'

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<sup>21</sup> Some of the adjectives in the example above are omitted, but leaving them in the DP does not affect grammaticality.

- (i) Katero prvo Tomovo odlično nemško izdajo si prebral?  
 which first Tom's excellent German edition is read  
 'Which first Tom's excellent German edition did you read.' (That one.)

Such a question is possible in a context in which the reader needs to read at least one of first German editions of excellent books (for example, Siddhartha, The Trial, The Reader, etc.) that belong to Tom. The speaker asks the question in (i), and the reader answers by pointing to one of the books and saying 'That one'.

This movement is not possible when a demonstrative is present in the DP, as illustrated in (14). The same holds for the *wh*-form of the numeral, (15).

(14) \*      Katero tisto prvo izdajo si prebral? (Nemško.)  
           which that first edition are read (German)

(15) \*      Katero tisto nemško izdajo si prebral? (Prvo.)  
           which that German edition are read? (First one)

Interestingly, *koliko* ‘how many/much’ (cardinal numeral) can appear before the demonstrative. Still, even in these examples, the *wh*-phrase can stay in situ (but note that speakers find (16a) more acceptable):

(16) a. *Koliko* tistih prvih nemških izdaj si prebral?  
           how-many those first German edition are read  
           ‘How many of those first German editions did you read?’  
       b. Tistih koliko nemških izdaj si prebral?

As for other *wh*-modifiers, when a demonstrative is present in the structure, the *wh*-adjective can appear lower in the DP, as (17) shows, but these examples are not completely acceptable under the true question reading (they are, however, completely acceptable as echo questions).

(17) ? Tiste Majine kakšne italijanske škornje nosi Alina? (Črne.)  
       those Maja’s what-kind-of Italian boots wears Alina? (Black.)  
       ‘What kind of those black Italian boots is Alina wearing?’

In addition, it has to be noted that *wh*-words can stay in situ in the DP even when no demonstrative is present. When they stay in situ, they get an echo-reading (without emphasis, they derive a surprise reading and *wh*-words with emphasis derive either both a request-for-repetition and a surprise reading):

(18) Majine *kakšne* italijanske škornje si si sposodil?  
       Maja’s what-kind-of italian boots REFL is borrow

Besides the presence of a demonstrative, there are also other restrictions on movement in a DP. The noun cannot move from its base position:

- (19) \*Kaj Majino črno italijansko si si sposodil?  
 what Maja's black Italian REFL are borrow

As for the post-nominal genitive noun, as in (20), it can be fronted in a DP. This usually happens with the question word for possessor and not the *wh*-word for genitive, (21). The latter is more grammatical in situ:

- (20) Prva nemška izdaja Hobita je razprodana.  
 first German edition HobbitGEN is sold-out

‘The first German edition of Hobbit is sold out.’

- (21) Čigava/?Česa izdaja je razprodana?  
 whose/ whatGEN edition is sold-out
- (22) Izdaja česa je razprodana?  
 edition whatGENis is sold-out

Returning to the parallel between the clause and the nominal domain – in both the *wh*-phrase appears at the left edge. When it appears in situ, the *wh*-phrase receives echo reading in both.

## 2.2 Two (or more) *wh*-phrases move

Slovenian is a multiple *wh*-fronting language. This means in sentences two (or more) *wh*-phrases move to the beginning of the question, as shown in (23) for arguments and in (24) for adjuncts. There are no Superiority effects in multiple *wh*-fronting in Slovenian.

- (23) a. Kdo je komu skuhal večerjo?  
 whoNOM is whoDAT cook dinner  
 ‘Who cooked the dinner for whom?’
- b. Komu je kdo skuhal večerjo?
- (24) a. Kdaj je kje Anže skuhal večerjo?  
 when is where Anže cook dinner  
 ‘When and where did Anže cook dinner?’
- b. Kdaj je kje Anže skuhal večerjo?

Multiple *wh*-fronting in a DP is ungrammatical regardless of whether we front two *wh*-adjectives or a *wh*-adjective and a *wh*-numeral or a *wh*-demonstrative. The examples (25b), (26b) and (27b) show that multiple *wh*-fronting in a DP is not ungrammatical because of a certain order of *wh*-phrases.

- (25) a. \* Čigave kakšne italijanske škorne si si sposodil?  
 Whose what-kind-of Italian boots REFL is borrow  
 (Majine črne)  
 (Maja's black)  
 Intended: Whose and what kind of boots did you borrow?
- b. \* Kakšne čigave italijanske škornje si si sposodil?
- (26) a. \* Čigave katere črne škornje si si sposodil? (Majine italijanske.)  
 Whose which black boots REFL are borrow (Maja's Italian)
- b. \*Katere čigave črne škornje si si sposodil?
- (27) a. \* Kakšne katere Majine škornje si si sposodil?  
 what-kind-of which Maja's boots REFL are borrow  
 (Črne italijanske.)  
 (Black Italian)
- b. \* Katere kakšne Majine škornje si si sposodil?
- (28) \* Katero katero tisto izdajo si prebral? (Prvo nemško.)  
 which.NUM which.ADJ that edition are scratched (First German)
- (29) \* Katero katero nemško izdajo si prebra? (Tisto prvo.)  
 whichDEM whichNUM German eddition is read (That first one)

Two things have to be noted. First, these multiple questions are not ungrammatical because one could not assign meaning to them, as speakers find questions in which we coordinate two adjective *wh*-phrases completely grammatical, as in example (30) which would receive an answer like *Majine črne škornje* 'Maja's black boots'. This is not surprising if we assume a bi-clausal analysis of coordinated *wh*-questions as proposed by Citko and Gračanin-Yukseš (2013).

- (30) Čigave in kakšene italijanske škornje si si sposodil?  
 whose and what-kind-of Italian boots REFL are borrow

Second, (28) and (29) are not ungrammatical because of the sequence of homophonous words. While there is a restriction against sequences of homophonous words in some languages, such as Serbo-Croatian (see Bošković 2001b), there is no prohibition against this in Slovenian (Mišmaš 2014). This can be seen from the example (31) below, but also, for example, from example (19) in which two homophonous clitics appear:

- (31) Kaj kaj pogojuje?  
 what what conditions  
 ‘What conditions what?’

As expected from the fact that we cannot front the *wh*-noun even if it is the only *wh*-element in the DP, we also cannot front a *wh*-modifier and a *wh*-noun, (32).

- (32) a. \* Kakšne kaj Majine italijanske si si sposodil?  
 what-kind-of what Maja’s Italian REFL are borrow  
 b. \* Kaj kakšne Majine italijanske si si sposodil?

*How-many/much*-DPs behave differently. *How-many/much* can appear with another *wh*-adjective in the DP. This means that we can find questions like (33a) below in Slovenian. With *koliko*, however, the word order in these *wh*-phrases is fixed.

- (33) a. *Koliko kakšnih* Majinih italijanskih škornjev si si sposodil?  
 how-many what-kind-ofPL Maja’s Italian boots REFL are borrow  
 ‘How many black Italian boots did you borrow?’  
 b. \**Kakšnih koliko* Majinih italijanskih škornjev si si sposodil?

To summarize, this section showed a major difference between sentences and DPs. While one finds multiple *wh*-fronting in a sentence in Slovenian, there is never multiple *wh*-fronting in a DP. The only exceptions to this are questions with *koliko* ‘how much/many’.

### 2.3 A focus-phrase and a *wh*-phrase

A *wh*-phrase and a focus phrase can appear together in a sentence, as shown below. This is not surprising, since multiple *wh*-movement in examples without Superiority (cf. (23) and (24)) is taken to be an instance of focus movement (see Bošković 2002, but also section 3).

- (34) a. Kdo je ANŽETA udaril?  
who is ANŽE.ACC hit  
'Who hit Anže?'
- b. ANŽETA je kdo udaril?

While we cannot front multiple *wh*-words in a DP, we can front a *wh*-word and a (contrastively) focused word. But in the DP, the *wh*-word must precede the focused word.

- (35) a. Kakšne ITALIJANSKE Majine škornje si si sposodil?  
what-kind-of ITALIAN Maja's boots REFL are borrow
- b. \* ITALIJANSKE kakšne Majine škornje si si sposodil?

Again, sentences and DPs behave differently with respect to word order or focused and *wh*-phrases.

### 2.4 One *wh*-element moves – one stays in situ

While Slovenian is a multiple *wh*-fronting language, this fronting is not obligatory. There are many cases in which at least one *wh*-phrase needs to move to the left periphery, while the other(s) either do not move or move to a certain point in the structure (see Mišmaš 2014 for more). This 'optional' multiple *wh*-movement is shown below, (but see (23) and (24) for comparison):



- (36) a. Kaj je Anže skuhal komu?  
 whatACC is Anže cook whoDAT  
 ‘What did Anže cook for whom?’  
 b. Komu je Anže skuhal kaj?
- (37) a. Komu je Anže kaj skuhal?  
 whoDAT is Anže whatACC cook  
 ‘What did Anže cook for whom?’  
 b. Kaj je Maja komu skuhala?

One cannot find a similar situation in DPs, since multiple *wh*-words are prohibited in general. Even if just one *wh*-word fronts and one stays in situ, the DP is unacceptable.

- (38) \* *Katere* Majine *kakšne* italjanske škornje nosiš?  
 Which Maja's what-kind-of Italian boots wear  
 (39) \* *Čigave* črne *katere* škornje nosiš?<sup>22</sup>  
 Whose black which boots wears?

The two projections are thus not different only in the availability of multiple *wh*-fronting, but also in the availability of multiple *wh*-phrases – as these are not possible in the DP.

In this section, it was shown that the two projections behave similarly with respect to single *wh*-elements – *wh*-phrases appear at the left edge of the IP and the DP. However, there are three instances of non-parallel behavior of the two projections: multiple *wh*-fronting is only available in the sentence, but not in the DP, optional *wh*-fronting displays the same behavior, and the word order of *wh*-phrases and focus phrases is free in IPs, but not in DPs. I provide analysis of these similarities and differences in the next two sections.

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<sup>22</sup> This example sounds slightly better when the *wh*-in-situ is emphasized and gets an echo interpretation:

- (i) Čigav rdeč KATERI avto?  
 Whose red WHICH car

### 3. *Wh*-movement in the sentence

Slovenian is a multiple *wh*-fronting language, as shown in examples such as (23) and (24) in which all *wh*-phrases are moved to the clause initial position.<sup>23</sup> Example (23) also shows that there is no strict word order of *wh*-phrases for the subject and direct object in matrix questions (i.e. no Superiority effects in matrix clauses). (24) shows that the same holds for the subject and the adjunct *wh*-word. Same lack of Superiority effects also holds for embedded questions (for argument and non-argument *wh*-phrases).

- (40) a. Miha razmišlja, kdo je komu skuhal večerjo.  
 Miha thinks wh<sub>NOM</sub> is wh<sub>DAT</sub> cook dinner  
 ‘Miha is thinking who cooked dinner for whom.’
- b. Miha razmišlja, komu je kdo skuhal večerjo.

- (41) a. Miha razmišlja, kdaj je kje kuhal Anže.  
 Miha thinks when is where cook Anže  
 ‘Miha is thinking when did Anže cook where?’

Miha razmišlja, kje je kdaj kuhal Anže.

Lack of Superiority also holds for multiple long distance fronting from embedded clauses, questions with topicalized phrases and in correlative sentences, as in (42) (but see Mišmaš (2014) for more examples).

- (42) a. Če bo kdo koga videl, bo ta tega spoznal.  
 if will wh<sub>NOM</sub> wh<sub>ACC</sub> see will this that recognize  
 ‘If somebody sees someone, he will recognize him.’
- b. Če bo koga kdo videl, bo tega ta spoznal.

The examples above show that Slovenian never exhibits Superiority effects. This, following Bošković (1997a, 1997b, 1999, 2002), means that Slovenian never exhibits real *wh*-fronting (i.e. movement to check [+wh] feature) but that *wh*-phrases move to check the [+focus] feature. In addition, this indicates that

<sup>23</sup> Slovenian has been left out of general discussion about multiple *wh*-fronting, but there are proposals of its analysis (see for example Golden 1997 and Mišmaš 2014).

movement does not proceed to CP but rather to IP.<sup>24</sup> We can therefore conclude that *wh*-fronting in Slovenian is in fact focus fronting. In this sense, Slovenian is similar to other multiple *wh*-fronting languages, such as Russian (cf. Stepanov 1998). However, in Slovenian multiple *wh*-fronting is not obligatory, as examples (36) and (37) show (but see Mišmaš 2014 for more).

#### 4. *Wh*-elements in the DP

Assuming that the clausal and nominal domains are parallel and taking into account the fact that Slovenian is a multiple *wh*-fronting language, a few questions arise based on the data in section 2. First, do *wh*-phrases move to the left edge of the DP? Second, what is their exact position and what is the motivation for movement? Third, why are there no multiple *wh*-phrases in the DP?

##### 4.1 Is there *wh*-movement in the DP?

In a clause of a *wh*-fronting language, *wh*-phrases move from where they are primarily merged. The motivation for movement is typically the *wh*-feature (or the focus-feature in Slovenian). I argue that *wh*-words also move in DPs. The crucial piece of evidence is the fact that *wh*-phrases can appear in two different positions.

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<sup>24</sup> Another argument for different locations of multiple *wh*-fronting comes with the interpretation of multiple *wh*-questions. There exists a division between single-pair (SP) and pair-list (PL) answers and Bošković (2001a, 2002) shows that *wh*-movement to SpecCP forces a PL reading and that when no *wh*-element is overtly moved to SpecCP, both SP and PL answers are available. Bulgarian and Romanian only have PL answers, while Serbo-Croatian, Russian and Polish have PL and SP answers, which indicates/serves to indicate means they move *wh*-phrases below CP (Bošković 2002). This also holds in Slovenian, where an example like (i) can get two readings:

- (i) Kaj je kdo / kdo je kaj kupil?  
 what is who / who is what buy  
 ‘Who bought what?’

Two contexts and the corresponding answers are possible:

1. *Single pair*: We are in a store and see a person buying an item, but cannot see who it was and what they bought. We ask (i). *Answer*: John bought pants.

2. *Pair list*: We know there is a group of people and that each of them bought something, but we do not know who bought what. We ask (i). *Answer*: John bought pants, Mary a cake, Tom bought coffee, ...

As it was shown in (4), repeated below in (43), there exists an underlying word order of modifiers in the DP. This word order changes when one of the modifiers is a *wh*-phrase. An example of this is shown in (10), repeated below in (44), in which *kakšen* ‘what kind of’ appears at the left edge of the DP (and not after the adjective of color, as one might expect based on the underlying word order).

(43) Dem > Num ORD > Num CARD > A POSSESSOR > A COLOR > A ORIGIN/NATION > N

(44) Kakšne               Majine italijanske škornje si       si sposodil? (Črne.)  
 What-kind-of       Maja’s Italian       boot REFL are borrow (Black)  
 ‘What kind of Maja’s Italian boots did you borrow?’

In addition, there are two instances of constructions in which the *wh*-phrase can appear in situ. The first are echo questions, as in (45), the second are DPs in which there is a demonstrative. In the latter case, movement of the *wh*-modifier is ungrammatical, as the contrast in (46) shows.

(45) Majine *kakšne*               italijanske škornje               si       si       sposodil?  
 Maja’s what-kind-of       italian       boots               REFL       are       borrow

(46) a. ?Tiste       Majine kakšne               italijanske               škornje nosi       Alina?  
           those       Maja’s what-kind-of       Italian               boots wears       Alina?  
           ‘What kind of those black Italian boots is Alina wearing?’  
       b. \*               Kakšne tiste Majine italijanske škornje nosi Alina?

The fact that the *wh*-phrase can appear lower or higher in the DP, as well the underlying word order of adjectives, indicates that *wh*-phrases are moved to the left periphery of the DP, rather than being merged there.

#### 4.2 The motivation and location for movement

The question is then also, what is the motivation for movement. Based on *wh*-fronting in the IP, one might suggest focus. Focused reading is available in a DP when a focused phrase has no emphasis (nor is it a *wh*-element) – in these examples, the focused word must front. This is shown in (47) in which the word *črni* ‘black’ is focused. If we compare the word order in (47) to the base word order in (43) above, we can see that it has changed (adjective of color precedes

adjective of possession). The focus word can, however, never move across the demonstrative, as (47b) shows. In addition, as examples in section 2.3 have shown, there can be focus fronting together with *wh*-fronting in Slovenian DPs. This is repeated below. Note that the contrastively focused phrase has to appear after the *wh*-phrase.

- (47) a. Tisti črni Majini škornji  
 those black Maja's boots
- b. \* Črni tisti Majini škornji  
 black those Maja's boots
- (48) a. Kakšne ITALIJANSKE Majine škornje si si sposodil?  
 what-kind-of ITALIAN Maja's boots REFL are borrow
- b. \* ITALIJANSKE kakšne Majine škornje si si sposodil?
- (49) a. Kakšne MAJINE italijanske škornje si si sposodil?  
 what-kind-of Maja's Italian boots REFL are borrow
- b. \* MAJINE kakšne italijanske škornje si si sposodil?

Examples in (48) and (49) show that *wh*-fronting proceeds higher than focus fronting and also that *wh*-fronting in a DP is not an instance of focus fronting. If both phrases moved for focus, then the word order of the *wh*-phrase and the focused phrase would either be free (as it is in Slovenian sentences, see section 2.3), or it would always be the case that the higher phrase in the underlying word order would move first. The latter is not the case, as (49) shows. If the underlying word order would be preserved, then example (49) would be acceptable, but it is not. Based on this we can conclude that *wh*-phrases in the DP do not move for focus reasons.

A possible cue for the motivation of movement comes from example in which demonstratives block movement, as in (46). In these, the demonstrative blocks the *wh*-modifier from appearing at the beginning of the DP. Based on Lyons (1999) demonstratives entail definiteness. The definiteness feature is associated with identifiability – the speaker signals the hearer is able to locate a referent for a DP, familiarity – what the speaker refers to is a part of knowledge shared by speaker and hearer, and uniqueness – there is just one entity (or one set) satisfying the description used (Alexiadou et al. 2007). If we look at the meaning of *wh*-DPs

above, this seems to be exactly what they mean: we are asking about the defining property of an entity (or a set) that will exclude all other candidates in the contexts and give us a unique entity (or a set of entities). Based on this, I suggest that movement proceeds because of the definiteness feature.<sup>25</sup>

As for the location of movement, Giusti (1993), Bernstein (2001), Alexiadou et al. (2007) propose that demonstratives are generated in a position below DP and that they universally move to SpecDP. In addition, the definiteness feature is in turn typically associated with D (see Alexiadou et al. 2007). Based on unacceptability of examples with a demonstrative and a *wh*-word, I suggest that *wh*-words move to SpecDP. D<sup>0</sup> has a definiteness feature and an EPP-feature that needs to be checked – and it is checked by the moved *wh*-word, which has a definiteness feature and a focus feature in Slovenian. The *wh*-word moves to SpecDP, but the focus feature is still not checked – it gets checked further on in the derivation.

### 4.3 Why no multiple movement in the DP?

The definiteness features also helps us understand why no multiple *wh*-fronting is available in Slovenian. Slovenian simply seems to be one of the languages that do not allow multiple definite items in a phrase. This then excludes examples such as (26) repeated in (50).

- (50) a. \* Čigave katere črne škornje si si sposodil? (Majine italijanske.)  
Whose which black boots REFL are borrow (Maja's Italian.)  
b. \* Katere čigave črne škornje si si sposodil?

Definiteness as a motivation for movement also accounts for the fact that demonstratives block movement (again, a phrase with two definite items is ungrammatical) and the fact that while we cannot front two *wh*-adjectives, we can front *koliko* ‘how much/many’ and a *wh*-adjective and that we can front *koliko* ‘how much/many’ over a demonstrative. *Koliko* ‘how much/many’ simply does not carry a definiteness meaning (we are not asking about a defining property, but rather about quantity). Note also that *koliko* ‘how much/many’ behaves differently,

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<sup>25</sup> Note that *which*-phrases are discourse linked. D-linked phrases are described in Pesetsky (1987) as interrogative phrase that imply the existence of a context set of familiar entities of the type denoted by the nominal.

since the word order was fixed and it has to appear before the *wh*-adjective, as I show below:

- (51) a. *Koliko kakšnih* Majinih italijanskih škornjev si si sposodil?  
 how-many what-kind-ofPL Maja's Italian boots REFL are borrow  
 'How many black Italian boots did you borrow?'  
 b. \* *Kakšnih koliko* Majinih italijanskih škornjev si si sposodil?

This is then an additional difference in the nature of *how many/much*- and *which*-phrases, which has been already observed in the past (on the nature of *how many*-phrases, see Romero (1998), Rett (2006a, b) inter alia).

## 5. Conclusions

While different parallels between the clausal and the nominal domain have been established in the past, I show that, in Slovenian, the two differ with respect to multiple *wh*-fronting. In Slovenian, multiple *wh*-fronting is available in the IP where it is motivated by the focus feature. Conversely, multiple *wh*-fronting is not available in the DP. This means that the IP and the DP are not completely parallel in Slovenian.

In addition, movement of *wh*-modifiers in the DP is not motivated by the focus feature, but focus movement is possible in the DP. The motivation for movement is the definiteness feature. Because of this feature, *wh*-modifiers move to SpecDP. Definiteness feature also explains why multiple *wh*-movement is not available in the DP – Slovenian simply seems to be one of the languages that do not allow multiple definite items in a phrase.

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## DP OR NP? THE CASE OF SERBIAN SOUTHEASTERN DIALECTS AND MACEDONIAN LANGUAGE

**Abstract:** Applying Bošković's (2008) generalizations about the typological differences between languages with and without articles (with conclusion that the latter do not project a DP) to the three southeastern Serbian dialects (Prizrensko-južnomoravski (PJ), Svrljiško-zaplanjski (SZ) and Timočko-lužnički (TL)) and Macedonian language (ML)) shows that almost all of these generalizations appear incorrect. TL and ML, varieties with a definite article, allow for left-branch and adjunct extraction, as well Japanese type of scrambling, they fail on the clause-mate NPIs test of negative-raising, their possessives can occur in predicative position and they cannot be modified by other possessives and adjectives in prenominal position, contrary to expected. Article-less PJ and SZ, though, allow for clitic doubling. Finally, article-less Serbo-Croatian allows transitive nominals with two (phonologically heavy) genitives, its pre-cardinal possessors may induce an exhaustivity presupposition, and left-branch and adjunct extraction are restricted over determiner-like items like the adjectives *pomenuti* 'mentioned' and *izvesni* 'certain', *contra* Bošković's (2008) generalizations. It is concluded that there seems to be no strict DP/NP parameter, but rather a set of structural and lexical properties with isoglosses which do not coincide, all of which can be more satisfactorily captured by the *phonologically null vs. saturated DP* approach, rather than with the "bare" NP vs. DP analysis.

**Key words:** *DP, Prizrensko-južnomoravski, Svrljiško-zaplanjski, Timočko-lužnički, Macedonian.*

### 1. The main focus

The main focus of this paper is verifying Bošković's (2008) generalizations about the typological differences between languages with articles (LWA) and article-less languages (ALL) on the data from varieties spoken on the so-called NP/DP border

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– the three southeastern Serbian varieties of Prizrensko-timočki dialect, Prizrensko-južnomoravski (PJ), Svljiško-zaplanjski (SZ) and Timočko-lužnički (TL), as well as Macedonian language (ML). On the basis of several generalizations, Bošković (2008) postulates a clear structural difference between LWA and ALL, as he argues the latter do not project a determiner phrase (DP). In the parameterized DP approach, the very presence/absence of DP should be responsible for the differences displayed between the two language groups (a weaker version of the claim would be that some languages without articles do not have DP.) As we will see, when applied to article-less PJ and SZ, as well as TL and ML, varieties with a grammaticalized post-positive definite article, many of the postulated generalizations appear incorrect. In addition, I will show that left-branch extraction and adjunct extraction, regularly present in article-less Serbo-Croatian (SC), in certain examples are blocked even in SC, indicating that even in these ALL under certain conditions some kind of DP is present and can be “activated”. This will lead us to a conclusion that Corver’s (1990, 1992) DP-parameter and Bošković’s (2008) generalizations fail to grasp the presented data and are rather deficit in explaining remarkable language divergence, like the one present in the three southeastern Serbian dialects and ML. Consequently, I will argue in favor of Stanković’s (2014a, 2014b) DP analysis of nominal expressions in all five varieties (SC, ML, PJ, SZ, TL), who argues that DP can be phonologically null, in which case we meet with syntactic behavior observed by Corver (1990, 1992) and Bošković (2008).

The outline of the paper is as follows. In Section 2, we will take a closer look at the arguments against projecting DP in ALL like SC, paying greatest attention to Bošković’s (2008) generalizations about the typological differences between LWA and ALL. In Section 3, I will present the three varieties spoken on the Southeast of Serbia (PJ, SZ, TL), as well as ML, and then test these four using Bošković’s (2008) criteria. Some arguments in favor of a DP analysis of SC NPs are introduced in Section 4. Section 5 concludes.

## **2. No DP for ALL?**

The question whether ALL like SC, Latin, or Mandarin Chinese need a determiner projection has stayed a provocative issue in syntax, tackling its semantic consequences as well, for the last 25 years, back to Abney’s (1987) and Corver’s (1990, 1992) seminal work on the functional make-up of nominal expressions. Separating the linguistic community, a lot of work in the field has been done to support arguments in favor or against the DP-parameter. We find the same picture in the case of Slavic formal studies – literature is divided regarding the substantial

issue whether they are advocating for the bare NP analysis of Slavic NPs (Zlatić 1997, 1998, Trenkić 2004, Bošković 2008, Despić 2011, 2013), or for the extended configuration with DP on top, making NP its complement (Progovac 1998, Leko 1992, 1999, Aljović 2002, Caruso 2011, 2012, Stanković 2014a, Stanković 2014b).

## 2.1. The nature of SC NPs

It's a well-known fact that SC (just like other article-less Slavic languages) has no grammaticalized articles and that its nominal expressions can consist of a bare singular or bare plural noun, available for different interpretations: definite, indefinite, non-specific, specific or generic, (1)-(3).

- (1) **Dečak** prelazi ulicu. (definite/indefinite) (SC)

boy crosses street

'A boy is crossing the street.'

'The boy is crossing the street.'

- (2) Nea za rođendan hoće **lutku**. (specific/non-specific)

Nea for birthday wants doll

'Nea wants a particular doll as a birthday present.'

'Nea wants a (= any) doll as a birthday present.'

- (3) **Vojnici** sanjaju mir. (generic/non-generic NP)

soldiers dream peace

'Soldiers dream of peace'

'The soldiers dream/are dreaming of peace'

SC noun phrases do not require any overt determiner in order to become arguments with an assigned theta-role, although SC disposes various sets of pronominal and adjective items capable of expressing definiteness, indefiniteness, specificity or non-specificity of the entire nominal phrase: *ovaj* 'this', *taj* 'that', *onaj* 'that', *pomenuti* 'the mentioned', *navedeni* 'the stated', *jedan* 'a, one', *neki* 'some', *izvesni* 'certain', *određeni* 'determined' etc (more on this in Section 4). Still, as can be seen from (1)-(3), the syntactical status of these elements is questionable as they

are not mandatory, so projecting DP is not grounded in empirical data. Zlatić (1997, 1998) notices that most of the determiner-like pronoun elements in SC share the same **pronoun-adjective** inflectional set with adjectives, (4). More importantly, SC ‘determiners’ and adjectives can appear in almost every possible position with regards to the noun, pre- and post-nominally, (5) – although it should be noted that this is present mostly in poetry discourse, with strong stylistic and/or archaic markedness.

- (4) a.    **ov-og** /            **t-og** /            **nek-og**            **lep-og**  
           dečak-a  
           this.GEN.SG /    that.GEN.SG /    some.GEN.SG    handsome.GEN.SG  
           boy.GEN.SG
- b.    **ov-om** /            **t-om** /            **nek-om**            **lep-om**  
           dečak-u  
           this.DAT.SG /    that.DAT.SG /    some.DAT.SG    handsome.DAT.SG  
           boy.DAT.SG

- (5) a.    taj    dečak    lepi  
           that    boy    handsome  
       c.    lepi            dečak    taj  
           handsome    boy    that
- b.    lepi            taj    dečak  
           handsome    that    boy  
       d.    dečak    taj    lepi  
           boy    that    handsome

Zlatić (1997, 1998) states that the morphology and syntax of SC ‘determiners’ suggest that they are actually adjectives, which should be analyzed in the NP domain and not at the assumed DP level. Applying Zwicky’s (1985) criteria for determining the head of SC noun phrases leads her to the conclusion that it must be the noun, and not any other element, that is the head of these phrases.

## 2.2. Left-branch extraction

All of the facts presented in the previous section go on par with the ones introduced into the linguistic literature already at the beginning of this hot debate. One such phenomenon is left-branch extraction (LBE) observed with Russian and SC adjectives and ‘determiners’, as given in (6), a syntactic feature never seen with LWA, (7):

(6) **Skupa<sub>i</sub>** / **Ta<sub>i</sub>** je vidio [**t<sub>i</sub>** kola]. (SC) (Bošković 2008)

expensive that aux seen car

‘It’s the expensive / that car that he saw / has seen.’

(7) \***Expensive<sub>i</sub>** / \***That<sub>i</sub>** he saw [**t<sub>i</sub>** car]. (English)

Based on examples like (6) and (7), Bošković (2008) has postulated a generalization, claiming that

- (1) only ALL may allow LBE.

### 2.3. Adjunct extraction

Chomsky (1986) observes the restriction of adjunct extraction (AE) in English, (8). Stjepanović (1998) and Bošković (2008) show that AE is acceptable in SC, (9).

(8) \*From which city<sub>i</sub> did Peter meet [<sub>NP</sub> girls t<sub>i</sub>]?

(9) **Iz** **kojeg** **grada<sub>i</sub>** je Ivan sreo [**djevojke** t<sub>i</sub>]? (SC)

from which city AUX Ivan met girls

‘Ivan met girls from which city?’

They formalize the findings from (8) and (9) in the form of the claim that

- (2) only ALL may allow AE.

### 2.4. Japanese type of scrambling

Bošković (2008, 2012) establishes a correlation between the category of articles and the availability of Japanese type of long-distance scrambling, a syntax dislocation phenomenon different from topicalization and focalization, as it is semantically vacuous, i.e. has the undoing effect. In his (2004) paper on scrambling, Bošković explains that an A’-movement across an A’-element shows that (Russian and) SC wh-movement is subject to relativized minimality islands, (10-a), but examples like (10-b) are still acceptable. As topicalization is sensitive to wh-islands, visible from the English examples in (11), it is reasonable to assume that (10-b) should not involve topicalization on the derivation that yields a fully acceptable outcome, but should rather be a case of scrambling.

(10) a. ?\*Kakvu knjigu<sub>i</sub> Marko i Ivan znaju kada je Petar pročitao  $t_i$ ?

what kind book Marko and Ivan know when AUX Petar read

‘Marko and Ivan know when Peter read what kind of book?’

b. Ovu knjigu<sub>i</sub> Marko i Ivan znaju kada je Petar pročitao  $t_i$ .

this book Marko and Ivan know when AUX Petar read

‘Marko and Ivan know when Peter read this book’

(11) \*That doctor<sub>i</sub>, you wonder when Peter fired  $t_i$ .

Bošković (2008) formulates the generalization that

- **(3) only LWA may allow (Japanese type of) scrambling.**

## 2.5. Negative raising

LWA allow raising of negation from the embedded to the matrix clause with verbs like *believe*, so the negation can be interpreted either in the matrix, or in the embedded clause. The latter interpretation is confirmed by the strict clause-mate negative polarity items (NPIs), (12).

(12) John **didn’t** believe [that Mary would leave [<sub>NPI</sub> until tomorrow]].

Unlike LWA, SC fails on the clause-mate NPI test, disallowing negative raising:

(13) \*Jovan **nije** verovao [da će Marija otići [<sub>NPI</sub> sve do sutra]]. (SC)

Taking this test as an indicator of negative raising, the strongest version of Bošković’s (2008) generalization states that

- **(4) ALL disallow negative raising, while LWA allow it.**

The author emphasizes that, although some ALL can fail on the NPI test, they still may allow lower clause reading of the negation. That’s why (14) can have the



atheist (non-agnostic) reading that God does not exist in SC, as well as in ALL Korean, Japanese, Turkish, Chinese, Russian, Polish, and Slovenian.

(14) Ivan **ne** veruje da Bog postoji.

Ivan NEG believe that God exists

‘Ivan doesn’t believe that God exists.’

‘Ivan believes that God doesn’t exist.’

For this reason Bošković proposes a three-way split among verbs:

- negation interpreted in the lower clause and strict NPIs licensed under negative raising (possible only for some verbs in LWA)
- negation interpreted in the lower clause, strict NPIs not licensed (in some ALL)
- neither version of negative raising (rest of ALL).

## 2.6. Superiority effects with multiple-wh fronting

Languages that allow multiple-wh fronting can be categorized in two groups: languages that do not block (focalized) rearranging of multiple-wh items at the beginning of a question (SC, Polish, Czech, Russian, Slovenian, Mohawk), (15), and languages showing Superiority effects (\*OBJECT > SUBJECT) (Romanian, Bulgarian, Macedonian, Basque, Yiddish), (15), which are all LWA, (16)-(17).

(15) Ko koga vidi? / Koga ko vidi? (SC)

who whom sees whom who sees

(16) \*Who whom sees? / \*Whom who sees?<sup>27</sup>

(17) Koj kogo (go) gleda? / \*Kogo koj (go) gleda? (Macedonian)

Bošković (2008) establishes the generalization that

- (5) ALL don’t show Superiority effects with multiple-wh fronting.

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<sup>27</sup> English does not allow multiple-wh fronting.

As an exception, Hungarian has articles and no superiority, but this does not violate generalization 5, since the generalization only talks about ALL not showing superiority; LWA may or may not show it.

## 2.7. Clitic doubling

Bošković (2008) makes another correlation – between LWA and clitic doubling. Albanian, Macedonian, Bulgarian, Greek, Somali, Spanish, some dialects of French and Dutch, Catalan, Romanian, Hebrew and Arabic are all clitic doubling LWA, as shown in the Macedonian example in (18), unlike the situation in SC, (19).

(18) Una **na** **Nea<sub>i</sub>** **ì<sub>i</sub>** **go<sub>j</sub>** **dade** **podarokot<sub>j</sub>** –  
vetenata kukla.

Una to Nea her.CLITIC.DAT him.CLITIC.ACC gave present  
promised doll

‘Una gave Nea the present – the promised doll.’

(19) Una (\*joj ga) je Nei (\*joj ga) dala poklon. (SC)

The contrast illustrated in (18) and (19) leads Bošković (2008) to the generalization that

- (6) only LWA may allow clitic doubling.

Still, Marušič & Žaucer (2009, 2010) show that clitic doubling is not an exclusive feature of LWA, it being present in ALL Slovenian dialect spoken in the wider range of Nova Gorica, Gorica Slovenian:

(20) **Mene** **me** **zebe.** (Gorica Slovenian)

me.ACC me.CLITIC.ACC cold.3SG

‘I’m cold.’

Runić (2012, 2013) investigates a similar situation in Serbian Prizren-Timok dialect (PT), an article-less variant with non-mandatory clitic doubling, (21).

(21) Je I’ (**gu<sub>i</sub>**) **njuma<sub>i</sub>** vide na pijacu? (PT)

AUX Q CLITIC.ACC her.ACC saw on market

‘Did you see her in the market?’

According to Runić's (2013) informants, in PT doubling is allowed in specific definite, (22), as well as non-specific indefinite contexts, (23), leading to a conclusion that the doubled clitic does not bring definiteness or specificity effect<sup>28</sup>:

(22) Ja **ga<sub>i</sub>** **Milovana<sub>i</sub>** poštujem. (PT)

I him.CLITIC.ACC Milovan.ACC respect

'I respect Milovan.'

(23) Imaš **gu<sub>i</sub>** **salvetu<sub>i</sub>?** (PT)

Have her.CLITIC.ACC napkin

'Do you have a napkin?'

Based on the unacceptability of examples like (24), Runić ascertains that a pronoun and a doubled clitic cannot be separated by a verb in PT, unlike LWA like Macedonian, where the clitic and pronoun must be separated by the verb in the same type of contexts, (25).

(24) \*Je l' me čekaš mene?  
(PT)

AUX Q me.CLITIC.ACC wait me.ACC

'Are you waiting for me?'

(25) Mila \*(go) zamoli \*(go) nego včera. (ML)

Mila him.CLITIC.ACC ask him.CLITIC.ACC him.ACC yesterday

'Mila asked him yesterday.'

Doubled clitics in PT cannot follow a verb, but non-doubling clitics can, as illustrated in (26) and (27):

(26) \*Čekaš me mene. (PT)

wait me.CLITIC.ACC me.ACC

'You are waiting for me.'

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<sup>28</sup> This is contrary to Mišeska Tomić's (2008) findings that in South-Eastern Serbian dialects "direct objects are optionally clitic doubled when definite" and that "indirect objects, on the other hand, are optionally clitic doubled when specific" (Mišeska Tomić [2008]: 83).

(27) Čekaš me? (PT)

wait me.CLITIC.ACC

'Are you waiting for me?'

Runić also notices that, unlike in Bulgarian, where focalized constituents cannot be doubled, doubling of focalized elements in PT is possible both with pronouns and NPs:

(28) Ma ja ga NJEGA / MILOVANA poštujem,

a ne NJUMA.

PTCL I him.CLITIC.ACC him.ACC Milovan.ACC respect

and NEG her.ACC

'I respect him/Milovan, and not her.'

Runić follows Fukui (1988) and Bošković (2008), arguing that Japanese and SC pronouns are actually nouns, which **can** be modified by adjectives, (29)-(30), unlike English pronouns, which are proper determiners, so can't be modified by adjectives productively, (31).

(29) A: kinoo Taroo-ni atta ka-i? (Japanese)

yesterday Taroo-with met Q

'Did you see Taroo yesterday?'

B: un demo kinoo-no kare-wa sukosi yoosu-ga  
hendat-ta (Fukui 1988)

yes but yesterday.GEN he.TOP somewhat state.NOM

be strange.PAST

'Yes, but yesterday's him was somewhat strange.'

(30) A: Jesi li ga vidio juče? (SC)

are Q him.CLITIC.ACC seen yesterday

'Did you see him yesterday?'

B: Jesam, ali je jučerašnji on baš nekako bio čudan.

am but AUX yesterday's he really somehow been strange

'\*I did, but yesterday's he was really somehow strange.'

(31) \*yesterday's himself, \*short he, \*big it

According to Runić's informants, PT's pronouns can, while Macedonian ones cannot be modified by an adjective. More importantly, pronoun modification in PT is banned when the pronoun is doubled.

Based on all of the presented facts, Runić (2013) concludes that PT pronouns are both nouns and determiners. Under this view, PT has a (yet) non-lexicalized D feature, which is added during the derivation to pronouns, being it necessarily involved in clitic doubling (Bošković 2008). Runić assumes that the phenomenon of clitic doubling in article-less PT is a consequence of an ongoing language change, resulting from language contact with bordering LWA Macedonian and Bulgarian. This simply means that no DP is necessary in derivation of nominal expressions in PT, regardless the presence of clitic doubling.

## 2.8. Two adnominal genitives

Bošković (2008) builds on Willim's (2000) observation that LWA English, Arabic, Dutch, German, and Catalan allow two nominal genitive arguments, while ALL Polish, Czech, Russian, and Latin disallow this, as illustrated by the unacceptability of the Polish expression in (32).

(32) \*podbicie Rzymu Hannibala (Polish)

conquest Rome.GEN Hannibal.GEN

'Hannibal's conquest of Rome'

Bošković adds SC, Chinese, Quechua, and Turkish to Willim's ALL-list, with the conclusion that

- (7) ALL do not allow transitive nominals with two genitives.

## 2.9. Possessives

Bošković (2008) emphasizes that SC possessives can be found in the predicate position, (33-a), but at the same time they cannot be modified by a possessive or adjective, (34-a), while in English the situation is converse, (33-b) and (34-b).

- (33) a. Ova knjiga je **moja.** (SC) b. \*This book is my.  
this book is my  
'this book is mine'
- (34) a. \**moj / bogati susjedov konj* b. my/ rich neighbor's horse  
my rich neighbor's horse  
'my / rich neighbor's horse'

Also, unlike SC, pre-numeral possessives in English have an exhaustivity presupposition. Partee (2006) contrasts English expressions such as (35-a), which bring the presupposition that Zhangsan has exactly three sweaters, with Chinese ones, exemplified in (35-b), which do not bring such presupposition.

- (35) a. Zhangsan's three sweaters b. Zhangsan de [san jian  
maoxianyi] (Chinese)  
Zhangsan de<sub>POSS</sub> three CL  
sweaters  
'Zhangsan's three sweaters'

Due to the contrast in (35), Bošković (2012) postulates a generalization that

- **(8) possessors may induce an exhaustivity presupposition only in DP languages, i.e. LWA.**

## 2.10. Interim résumé

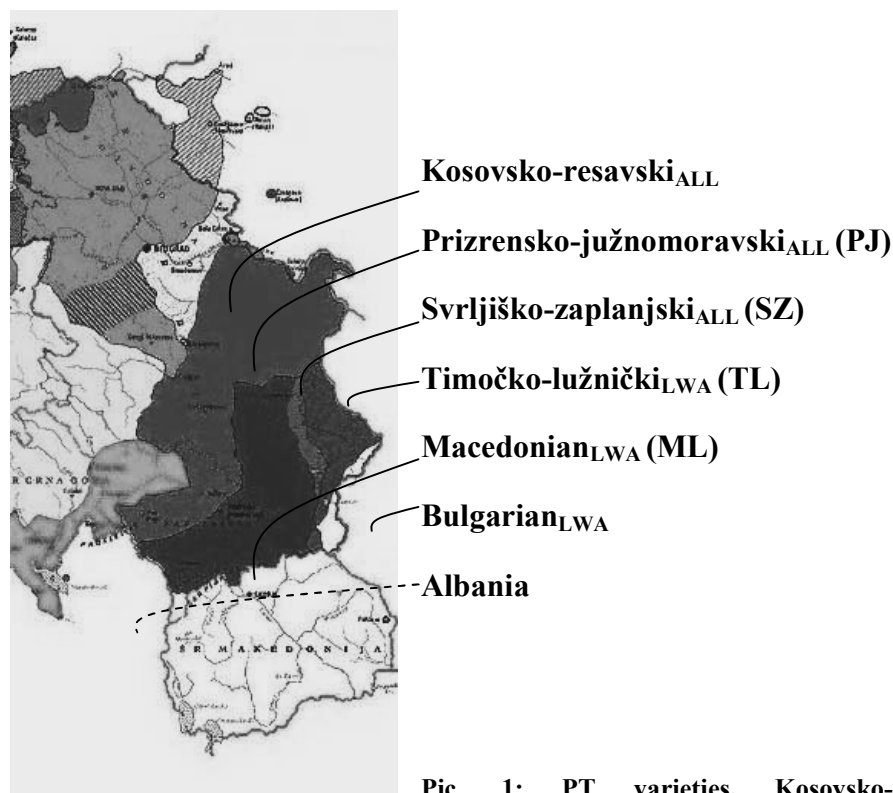
In section 2 I have presented the main line of reasoning against DP-analysis of ALL NPs (Corver 1990, 1992, Bošković 2008, 2012, Runić 2012, 2013). We also touched upon several issues in PT and Macedonian clitic doubling. In the following section we will thoroughly re-investigate the PT and Macedonian area and try to get a glimpse of the distribution of the relevant isoglosses, via the contrast between LWA Prizrensko-južnomoravski and Svrlijsko-zaplanjski variety and ALL Timočko-lužnički variety and Macedonian language.

### 3. The generalizations applied to PT varieties and Macedonian language

In this section we will verify Bošković's (2008) generalizations in the so-called NP/DP border area – the Southeast of Serbia and North of Macedonia. As we will show, almost all of the predictions will appear incorrect, which will lead us to a different kind of conclusion about the nature of nominal expressions in PT, and SC, generally.

#### 3.1. The three PT varieties and ML

Prizrensko-timočki dialect, spoken in the Southeast of Serbia, is traditionally divided into three varieties by two beams of North-South spreading isoglosses, back from Belić (1905) pioneering field work – Prizrensko-južnomoravski (PJ), Svrliško-zaplanjski (SZ) and Timočko-lužnički (TL), (Pic. 1).



Pic. 1: PT varieties, Kosovsko-resavski, Macedonian and Bulgarian language (Ivić 1994)

PJ and SZ are both article-less varieties. PJ is bordering ALL Kosovsko-Resavski in the Southwest and LWA Albanian in the south. The only Serbian LWA variety, TL, is bordering LWA Bulgarian language in the East, as well as Macedonian (ML) in the South. All three TL, ML and Bulgarian have a grammaticalized postpositive definite article on the initial nominal constituent in definite contexts, while the absence of the article marks indefiniteness (*dete-to* ‘the child’, *dete-ø* ‘a child’). In the remainder we will contrast ALL PJ and SZ with LWA TL and ML, taking Bošković’s (2008) perspective.

### 3.2. Left-branch and adjunct extraction

When uttered out-of-the-blue, sentences with LBE and AE in ML may appear unacceptable, but if supported with an appropriate context, like contrastive topic/focus, or in a particular discourse genre, ML and TL may allow both extractions. In (36-B) and (37) we see AE of an indefinite NP, judged as grammatical by all subjects<sup>29</sup> for both varieties with articles.

(36) A: Bev            da kupam    doruček –    burek    i    jogurt.    (ML)  
was.1<sup>st</sup>.SG    to    buy            breakfast    burek    and    yoghurt  
‘I went to buy breakfast – burek and yoghurt.’

B: [So    meso]<sub>i</sub>    kupi    [burek *t<sub>i</sub>]*?  
with    meat            buy    burek  
‘Have you bought burek with meat?’

(37) [S(əs)    meso]<sub>i</sub>    li    kupí    [burék *t<sub>i</sub>]*?    (TL)  
with    meat    Q    buy    burek  
‘Have you bought burek with meat?’

The extraction of an adjunct over an indefinite NP, marked by the absence of the postpositive article, could be explained by the unsaturated DP, which should act as

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<sup>29</sup> 20 subjects for each of the varieties were judging the acceptability status (-2 to 2) of 10 sentences after being disposed to audio-visual stimuli – a voice reading the appropriate example presented on the screen. Audio-stimuli were utilized to make sure that the subjects would be able to comprehend the intended interpretation (in case the given sentence is acceptable in their intuition).



a barrier. Nevertheless, LBE is totally acceptable even with definite NPs in ML poetry discourse, bringing exceptional stylistics and/or archaic markedness:

- (38) Najubavite<sub>i</sub>                      gi                      imam    videno  
 [<sub>t<sub>i</sub></sub>    krasotii                      tvoi],                      Makedonijo.  
 most beautiful.DEF.ART them.CLITIC.ACC have    seen  
 splenders                      yours                      Macedonia  
 ‘The most beautiful of your splenders have I seen, Macedonia.’

- (39) a. Ubavinite<sub>i</sub>                      gi                      imam    videno    [tvoi t<sub>i</sub>].  
 beauties.DEF.ART                      them.CLITIC.ACC                      have    seen                      yours  
 ‘I have seen your beauties.’  
 b. Tvoite<sub>i</sub>    gi                      imam    videno    [t<sub>i</sub> ubavini].  
 yours                      them.CLITIC.ACC                      have    seen                      beauties.DEF.ART  
 ‘I have seen your beauties.’

Examples (38) and (39) are important three-wise. First of all, they show that focalization/topicalization can allow for LBE in LWA ML, even in the case of prenominal modifiers bearing the postpositive definite article. This means that even saturated DP isn’t necessarily a blocking factor for LBE. Secondly, it illustrates that the syntax of ML superlatives, (38), as well as possessives, (39), is far more liberal in poetry discourse. Just as a reminder, this is the very same type of context used as an argument invoked by the proponents of the ‘bare’ NP approach for SC, as has been already illustrated back in (5), concerning the relative free order of SC determiner-like items and adjectives. Finally, examples like (38) and (39) suggest that a single language variety can have definite articles, as well as clitic doubling, and allow for LBE. The situation was quite similar in Shakespeare’s language, given the presence of both articles and LBE in Early Modern English.

In addition, LBE in the second sentence in (40) has been judged as grammatical by three quarters of our ML participants (15/20):

*SinFonIJA 6 Proceedings*

- (40) Gi vidov i zelenite i crvenite  
čevli. Skapi bea!  
them.CLITIC.ACC saw and green.DEF.ART. and red.DEF.ART  
shoes expensive were

'I saw both the red and the green shoes. They were quite expensive!'

I, na kraj, crvenite, gi kupi [t<sub>i</sub> čevli]?  
(ML)

and on end red.DEF.ART them.CLITIC.ACC buy shoes

'So, in the end, is it the red ones that you have bought?'

The acceptability of (38)-(40) is supported by the indubitable grammaticality of noun ellipsis in standard ML, such as the one presented in (41).

- (41) Crvenite gi kupi [t<sub>i</sub> čevli]? (ML)  
red.DEF.ART them.CLITIC.ACC buy shoes

'Have you bought the red ones?'

Unlike ML and SC, after eliding the noun, English adjectives do not remain 'bare' because the empty position must be filled by the filler *one*, (42).

- (42) Have you bought the red \*(ones)?

As for TL, both LBE and ellipsis are acceptable:

- (43) Crvénete li đī kupi cipéle? (TL)  
red.DEF.ART Q them.CLITIC.ACC buy shoes

'Is it the red ones that you have bought?'

- (44) Crvénete li đī kupi? (TL)  
red.DEF.ART Q them.CLITIC.ACC buy

'Have you bought the red ones?'

Based on the facts presented in (37)-(44), we can ascertain that LBE and AE is possible even with LWA and DP configurations, as ML and TL allow for both

extractions in colloquial and poetry discourse. This simply means that there is not a plain one-to-one correlation between the presence of articles in a language and absence of LBE and AE.

### 3.3. Scrambling

Just like with testing LBE and AE, sentences with Japanese-type scrambling need appropriate context. Of course, this holds not just for LWA, as good portion of SC examples of scrambling could be judged as ungrammatical if presented to the subjects out-of-the-blue. In the case of ML, yes/no questions bear a typical rising intonation, so for testing “scrambled” examples like (45) the question must be pronounced with the appropriate intonation<sup>30</sup>. This is the reason why, besides visual, our subjects were also exposed to audio-stimuli. 16 out of 20 native subjects judged (45) and (46) as acceptable to their intuition.

- (45) Ovoj moliv<sub>i</sub> učitelkata vide koga go<sub>i</sub> ukrade t<sub>i</sub>? (ML)  
 this pencil teacher saw when he.CLITIC.ACC stole  
 ‘Is this the pencil that the teacher saw you stealing?’

- (46) Molivot<sub>i</sub> učitelkata vide koga go<sub>i</sub> ukrade t<sub>i</sub>?  
 (ML)  
 pencil.DEF.ART teacher saw when he.CLITIC.ACC stole  
 ‘Is it the pencil that the teacher saw you stealing?’

The situation is nearly the same with the only SC LWA variety, TL, as scrambled questions such as (47) and (48) were evaluated as grammatical by all of the examinees<sup>31</sup>.

<sup>30</sup> All ML clitics must precede the main verb. In case of a definite object, the use of pre-verbal doubled clitic is obligatory:

(1) \*(Go<sub>i</sub>) ukrade (\*go<sub>i</sub>) molivot<sub>i</sub>.  
 he.CLITIC.ACC stole he.CLITIC.ACC pencil.DEF.ART  
 ‘He/She stole the pencil’

This indicates that the pre-verbal clitics in (45) and (46) are not resumptive pronouns.

<sup>31</sup> TL 1<sup>st</sup> and 2<sup>nd</sup> person clitics must follow the auxiliary:

(2) Ti (\*đu<sub>i</sub>) si đui ukral (\*đu<sub>i</sub>) olovkutu<sub>i</sub>.  
 You he.CLITIC.ACC AUX he.CLITIC.ACC stole he.CLITIC.ACC pencil.DEF.ART  
 ‘You stole the pencil’

(47) Ovú li je olóvku<sub>i</sub> učiteljica vidéla kad si đú<sub>i</sub>  
ukrál  $t_i$ ? (TL)  
this Q AUX pencil teacher saw when AUX her.CLITIC.ACC  
stole  
'Is this the pencil that the teacher saw you stealing?'

(48) Olóvkutu<sub>i</sub> li je učiteljica vidéla kad si đú<sub>i</sub>  
ukrál  $t_i$ ? (TL)  
pencil.DEF.ART Q AUX teacher saw when AUX her.CLITIC.ACC  
stole  
'Is it the pencil that the teacher saw you stealing?'

From (45)-(48) we can see that Japanese type of scrambling is possible in ML and TL not just with indefinite NPs, (45) and (47), but also with NPs bearing the postpositive definite article, (46) and (48).

### 3.4. Negative raising

When it comes to raising of negation from the embedded to the matrix clause with verbs like *believe*, ML and TL do not show the expected behavior. Namely, Bošković (2008) predicts that LWA should have both negation interpreted in the lower clause and strict NPIs licensed under negative raising. Contrary to predictions, both LWA varieties behave like SC – they allow for the negation to be interpreted in the embedded clause, (49)-(50), but do not license strict NPIs, (51)-(52).

(49) Ivan **ne** veruva deka Bog postoji. (ML)  
Ivan NEG believe that God exists  
'Ivan doesn't believe that God exists.'  
'Ivan believes that God doesn't exist.'

- (50) Ivan **ne** veruje da Bog postoji. (TL)

Ivan NEG believe that God exists

‘Ivan doesn’t believe that God exists.’

‘Ivan believes that God doesn’t exist.’

- (51) \*Jovan **ne** veruvaše [deka Marija **ke** otide [<sub>NPI</sub> se do utre]].  
(ML)

Jovan NEG believed that Marija will leave all until tomorrow

‘Jovan didn’t believe that Marija would leave until tomorrow’

- (52) \*Jovan **neje** verovál [da će Marija otídne [<sub>NPI</sub> sve do jutre]]. (TL)

Jovan NEG.AUX believed that will Marija leave all until tomorrow

‘Jovan didn’t believe that Marija would leave until tomorrow’

The examples above suggest that the proposed methods – the ‘agnostic/atheist’ test, (49)-(50), and the clause mate NPIs test, (51)-(52) – are simply not a reliable diagnostics for distinguishing DP from the so-called non-DP languages, or that Bošković’s (2008) generalization number 4 doesn’t hold.

### 3.5. Superiority effects with multiple-wh fronting

As has been already stated in subsection 2.6., ML blocks rearranging of multiple wh-items at the beginning of a question, showing Superiority effects (\*OBJECT > SUBJECT):

- (53) Koj kogo (go) gleda? / \*Kogo koj (go)  
gleda?(ML)

who whom he.CLITIC.ACC watch who whom he.CLITIC.ACC  
watch

This is in accordance with generalization number 5, that ALL don’t show Superiority effects with multiple-wh fronting. When applied to PJ and SZ, two

ALL varieties, the generalization correctly predicts the absence of Superiority effects, just like it is the case with SC:

- (54) Koj kogá gleda? / Kogá koj gleda? (PJ/SZ)  
who whom watch who whom watch

TL is another example of LWA not showing Superiority effects, similar in this respect to Hungarian:

- (55) Kuĵ kogá gleda? / Kogá kuĵ gleda? (TL)  
who whom watch who whom watch

Bošković (2008) cites Watanabe (2003), who argues that Hungarian traditional definite article is not a D-element. Following this lead, we could say that TL definite article is also not a D-element – a possibility not totally ruled out, given the fact that TL non-mandatory definite article actually presents a series of person proximal/distal marked suffixes (*dete-vo* [1<sup>st+</sup>, 2<sup>nd-</sup>], *dete-to* [1<sup>st-</sup>, 2<sup>nd+</sup>], *dete-no* [1<sup>st-</sup>, 2<sup>nd-</sup>]) that go on par with the three-fold series of demonstratives. Still, ML has the same three series of mandatory definite article suffixes in addition to the demonstratives, but displays Superiority effects. Nevertheless, generalization 5 on the correlation between the lack of articles and Superiority effects (if multiple-wh fronting is possible) appears absolutely correct in case of the four contrasted varieties.

### 3.6. Clitic doubling

In subsection 2.7. we have already pointed out that, contrary to Bošković's (2008) prediction concerning the connection between articles and clitic doubling, Marušič & Žaucer (2009, 2010) and Runić (2012, 2013) showed that clitic doubling is present in ALL Slovenian Gorica regional dialect and Serbian PT dialect. Still, Runić (2012, 2013) argues that PT has a non-lexicalized D feature, which is added during the derivation to pronouns. This is motivated by several findings that differentiate between clitic doubling in ML (as well as Bulgarian) and PT. First of all, the status of clitic doubling in PT is non-mandatory, unlike ML and Bulgarian. According to Runić's (2013) results, PT allows for clitic doubling both in specific definite and non-specific indefinite contexts. Also, in PT a pronoun and a doubled clitic cannot be separated by a verb, and they both cannot follow a verb, unlike in

ML. Finally, Bulgarian focalized constituents cannot be doubled, but doubling of focalized elements in PT is possible both with pronouns and NPs.

According to the participants in our survey, clitic doubling with non-specific indefinite nominal expressions is ungrammatical in both ALL varieties, PJ and SZ. All 40 examinees have judged (56) as unacceptable in indefinite contexts. Just like in the case of ML, TL and Bulgarian, clitic doubling is possible only in definite or specific contexts, (57).

(56) \*Imate li **gu** **salvetu?** (PJ/SZ)

Have Q her.CLITIC.ACC napkin

'Do you have a napkin?'

(57) Imate li **gu** **onu salvetu sa cvečke?**

Have (Q) her.CLITIC.ACC that napkin with flowers

'Do you have a/the napkin with flowers on?'

Also, a pronoun and a doubled clitic **can** be separated by a verb, (58), but this is more likely to happen when there is more phonological material between, for instance, if a personal pronoun is inserted, (59):

(58) Mica **ga** vidéla **njega** na svadbu.

Mica him.CLITIC.ACC saw him.ACC on wedding

'Mica saw him at the wedding.'

(59) Je l' me **čekaš ti** mene ili ne?

AUX Q me.CLITIC.ACC wait you me.ACC or not

'Are you waiting for me or not?'

Although example (60) really is ungrammatical, doubling clitics after a verb is not restricted, as illustrated in (61)-(63):

(60) \*Čekaš me mene.

wait me.CLITIC.ACC me.ACC

'You are waiting for me.'

- (61) Čekaš me MENE cel dan/dən, a ne  
SLAVČETA.  
wait me.CLITIC.ACC me.ACC whole day and NEG  
Slavče.ACC

'Whole day you are waiting for me, not Slavče.'

- (62) Čekaš li me ti mene u prodavnicu?  
wait Q me.CLITIC.ACC you me.ACC in store

'Are you waiting for me in the store?'

- (63) Vidé li ga ti njega sa rakiju?!  
saw Q him.CLITIC.ACC you him.ACC with rakija

'Did you just see him (passing by) with rakija?!'

In (61) we see the same clause from (60), but with contrastive focus on the pronoun, allowing for the doubled clitic to appear postverbally. Likewise separating the pronoun and clitic with phonologically heavier material, the clitic is more likely to appear if intervened by another personal pronoun, as the case is with the question in (62) or the petrified expression of surprise in (63).

Runić (2013) contrasts Bulgarian and PT regarding doubling of focalized elements. As we recall, in PT this is possible both with pronouns and NPs, unlike Bulgarian focalized constituents, which cannot be doubled. Still, both analyzed LWA varieties, ML and TL, can have doubled focalized elements. In TL this is a matter of free choice, (64), while in ML doubling is even obligatory, (65):

- (64) Ma ja (ga) NJEGA / MILOVANA poštujem,  
a ne NJUMA. (TL)  
PTCL I him.CLITIC.ACC him.ACC Milovan.ACC respect  
and NEG her.ACC

'I respect him/Milovan, and not her.'



- (65) More jas NEGO / MILE \*(go) počitavam, a  
 ne NEJZE. (ML)
- PTCL I him.ACC Mile.ACC him.CLITIC.ACC respect and  
 NEG her.ACC

'I respect him/Milovan, and not her.'

We now turn to Fukui's (1988) and Bošković's (2008) treatment of Japanese and SC pronouns as nouns, given the fact that they can be modified by adjectives more productively than in English. Runić (2012, 2013) argues that modifying pronouns in ML is blocked, unlike the situation in PT<sup>32</sup>. Our experiment, though, has shown different results. Only the standardized variety, ML, accepts this, rather abstract and poetic, type of adjective modification. The following ML examples are found through Google:

- (66) Licemeren akt koj zaslužuva vrvna osuda, fantomski,  
 hypocritic act which deserves top condemnation phantomwise  
 podlo mu zabivam nož na včerašniot jas,  
 meanly him.CLITIC.DAT sink knife to yesterday's me  
 pritaeno bez vlaknana jazikot  
 secretly without hair on tongue  
 plukam vrz utrešniot. (ML) ([http://ygeneration99.blogspot.com/2012/04/blog-post\\_01.html](http://ygeneration99.blogspot.com/2012/04/blog-post_01.html))  
 spit on tommorow's.

<sup>32</sup> Bošković (2012) argues that Macedonian is (what he labels) an AP language with articles, so adjectives disrupt case assignment and pronouns must bear default nominative in cases such as (1), but if the pronoun is fronted, it can bear accusative, (2).

(1) Vistinskiot toj nikogaš ne ke se pojavi. / Go vidov vistinskiot  
 toj/ \*nego.  
 real.DEF.ART he never NEG will REFL. show-up him.CLITIC.ACC saw real.def.art  
 he/ him  
 'The real him will never show up.'/'We saw the real him.'

(2) Go vidov nego, vistinskiot *t<sub>i</sub>*.

Nevertheless, ML post-adjectival accusative pronouns are not ungrammatical, as visible by the following example found on the Internet:

(3) Nikogaš nemoj da zasakuvaš nekoj preku internet bidejki ne go znaeš vo živo te ne go znaeš  
 vistinskiot nego. (<http://ask.fm/soveti91/answer/116850581710>)

‘An hypocritical act deserving ultimate condemnation, like a phantom, meanly, I sink a knife into yesterday’s me, secretly, outspoken I spit on tomorrow’s me.’

(67) Mi fali **stariot jas** koj beše iskren i se  
 oblikuvaže, ne  
 me.CLITIC.DAT miss old me who was honest and REFL form not  
**denešniot jas** koj e izgradena ličnost so svoj stav.  
 today’s me who is built personality with REFL.POSS attitude

(<http://forum.kajgana.com/threads/%D0%94%D1%80%D0%B0%D0%B3%D0%B0-%D0%9A%D0%B0%D1%98%D0%B3%D0%B0%D0%BD%D0%B0.36778/page-1075>)

‘I miss the old me, who was honest and was flexible, not today’s me, who has a built personality with his own attitude.’

Examples (66) and (67) show that adjective modification is fully acceptable in ML, which was confirmed by all of our informants. As for the three dialectal varieties, PJ, SZ and TL, adjective modification was plainly rejected by most of the subjects, regardless the presence/absence of articles in their native language. When interrogated *post festum* on the reason for judging these phrases as ungrammatical, most of the examinees replied that they had “never heard anyone speak in dialect in that manner”, although they do not see adjective modification of pronouns as a malformation. This might be the reason why in Runić’s (2013) survey adjective modification was not acceptable with clitic doubling – clitic doubling is perceived as a non-standard, dialectal feature, so having them both in one sentence seems like stylistic/variety incoherence.

Based on all of the presented facts, we can conclude that PT clitic doubling does not differ significantly from the one present in ML. PJ and SZ clitic doubling is not allowed with indefinite or non-specific NPs, the doubled pronoun and the clitic can be separated by a verb, or appear postverbally under certain conditions, and a focalized pronoun / proper noun can be doubled in both ALL varieties. The same goes for clitic doubling in ML. In addition, we saw that there is no genuine correlation between adjective modification of pronouns and lack of articles. The data suggests three possibilities. The first possibility is that D is not necessarily involved in clitic doubling, as argued by Bošković (2008). The second possibility is that PT does not have a non-lexicalized D feature, which is added during the derivation to pronouns, as proposed by Runić (2013), but that it does project DP. The third possibility would be that not even ML and TL have a proper DP, but a

simple D feature, resulting from language change through language contact with bordering LWA Greek and Albanian.

### 3.7. Two adnominal genitives

Bošković's (2008) generalization 7 that LWA do not allow transitive nominals with two genitives is correct for SC only in case genitive NPs are phonologically light, as they tend to move to pre-nominal position and become possessives, illustrated in (68) (although some speakers find even the first stage in (68) fully acceptable). But, if both genitive NPs are phonologically heavy and/or complex phrases, they cannot climb up, so they stay *in situ*, allowing for transitive nominals to be modified by two genitives even in ALL SC, (69).

(68) % opis sela Andrića → Andrićev opis  
 sela  
 description village.GEN Andrić.GEN Andrić's description  
 village.GEN  
 'Andrić's description of the village' 'Andrić's description of the village'  
 'description of Andrić's village' #'description of Andrić's  
 village'

(69) opis sela Ive Andrića  
 description village.GEN Ivo.GEN Andrić.GEN  
 'Ivo Andrić's description of the village' (agent reading)  
 'description of Ivo Andrić's village' (possessive reading)

Besides the **possessive** reading, denoting the description of Ivo Andrić's village, the proper name in genitive in (69) can also trigger the intended **agent** interpretation, denoting the description of a/the village made by Ivo Andrić. Moreover, the ordering of adnominal genitives is the same like in LWA French (or English), where Theme-argument (<sub>T</sub>) must be positioned closer to the transitive deverbal noun than the Agent-argument (<sub>A</sub>):

(70) a. la description du village<sub>T</sub> par Ivo Andrić<sub>A</sub>      b. \*la description par Ivo Andrić<sub>A</sub> du village<sub>T</sub>

(71) a. opis sela<sub>T</sub> Ive Andrića<sub>A</sub>      b. \*opis Ive Andrića<sub>A</sub> sela<sub>T</sub>

Also, SC single feminine patronyms regularly do not move to pre-nominal position, allowing for double adnominal genitives to appear, once again:

- (72) opis sela Andrićeve  
 description village.GEN Ms Andrić.GEN  
 ‘description of a/the village by Ms Andrić’  
 ‘description of Ms Andrić’s village’

Given the observations made in (68)-(72), we can conclude that, *contra* Bošković’s (2008) generalization, ALL SC does allow two adnominal genitives to modify a single deverbal transitive noun. Moreover, when present in SC, the two adnominal genitives must have the same ordering like in LWA (NOUN + THEME + AGENT, \*NOUN + AGENT + THEME).

### 3.8. Possessives

All of the empirical facts concerning SC possessives observed by Bošković (2008) can also be ascribed to LWA ML and TL. Namely, ML and TL possessives can be found in the predicate position, (73), and TL possessives cannot be modified by a possessive or adjective<sup>33</sup>, (74).

- |   |  |
|---|--|
| (73) a. Ovaa kniga e <b>moja</b> . (ML)<br>this book is my<br>‘this book is mine’ | b. Ováj knjiga je <b>mojá</b> . (TL)<br>this book is my<br>‘this book is mine’ |
| (74) *moj / *bogat komšijin konj (TL)<br>my/ rich neighbor’s horse                |  |

The fact illustrated in (73) is present with LWA Italian possessives also, as they regularly appear in sentence predicative:

- |   |           |                                      |
|---|-----------|--------------------------------------|
| (75) a. Il libro è <b>mio</b> .<br>this book is my<br>‘this book is mine’ | (Italian) | b. mio libro<br>my book<br>‘my book’ |
|---|-----------|--------------------------------------|

In addition, Mandarin Chinese is article-less, but its possessives can be modified by another possessive (or adjective):

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<sup>33</sup> Macedonian has pronominal possessives only, so testing possessive modification is impossible, given the unacceptability of phrases such as *\*moj niven konj* (*\*my their horse*) even in English.

- (76) wǒ de línjū de mǎ (Mandarin)  
 I POSS. PART. neighbor POSS. PART. horse  
 ‘my neighbor’s horse’

Finally, Marušič & Žaucer (2013) and Stanković (2014a) show that ALL Slovenian and SC pre-numeral possessives **can** bring an exhaustivity presupposition to the entire nominal/cardinal expression, unlike the ambiguous post-numeral position. The cardinal phrase with the post-cardinal possessive in sentence (77) is ambiguous between the exhaustive (non-partitive) interpretation, that all three Marko’s sisters wear skirts, and the non-exhaustive (partitive) reading, that three among Marko’s sisters wear skirts.

- (77) Tri Markove sestre nose suknje. (ambiguous) (SC)  
 three Marko’s sisters wear skirts  
 ‘Marko’s three sisters wear skirts.’ (exhaustive)  
 ‘Three of Marko’s sisters wear skirts.’ (non-exhaustive)

Unlike the post-numeral possessive, pre-numeral possessives can only have the exhaustive interpretation, in case the cardinal number bears no additional intonation focus:

- (78) Markove tri sestre nose suknje. (non-ambiguous) (SC)  
 Marko’s three sisters wear skirts  
 ‘Marko’s three sisters wear skirts.’ (exhaustive)  
 #‘Three of Marko’s sisters wear skirts.’ (non-exhaustive)

Still, if additional stress is put on the cardinal number, both readings are available for the pre-numeral phrase:

- (79) Markove TRI sestre nose suknje. (ambiguous) (SC)  
 Marko’s three sisters wear skirts  
 ‘Marko’s three sisters wear skirts.’ (exhaustive)  
 ‘Three of Marko’s sisters wear skirts.’ (non-exhaustive)

The fact presented in (79) might be the reason for Bošković's (2012) judgment that SC possessives, among others ALL, cannot bring an exhaustivity presupposition. The difference illustrated in (77)-(78) is present in other Slavic ALL, like Russian, Czech and Polish<sup>34</sup>. In addition, Partee (2006) reports on Henrietta Yang's and Jowang Lin's intuition that in some examples the presupposition **is** present with Mandarin pre-numeral possessives, also<sup>35</sup>. All of these facts suggest that not even generalization 8 seems to be correct – some ALL languages have exhaustivity presupposing pre-numeral possessives. Also, there are LWA like ML, TL and Italian, which have predicative possessives. Finally, Mandarin allows for possessive modification of possessives, argued to be a substantial difference between SC and English possessives.

### **3.9. Resume**

Table 1 summarizes the results for all four varieties altogether with SC and English, showing that almost all of Bošković's (2008) generalizations mismatch with the data. Except for generalization 5, all other predictions turned out incorrect. TL and ML behave like SC, PJ and SZ regarding LBE, AE, scrambling, both negative raising tests, clitic doubling, allowing two adnominal genitives and exhaustivity presupposition for pre-numeral possessives.

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<sup>34</sup> As one could expect, in ML and Bulgarian the exhaustivity presupposing pre-numeral possessive must bear the definite article:

(1) Markovi-\*(te) tri sestri (ML/Bulgarian)

'Marko's three sisters'

<sup>35</sup> Our informants share the same intuition.

	Serbo-Croat. <sub>ALL</sub>	PJ <sub>ALL</sub>	SZ <sub>ALL</sub>	TL <sub>LWA</sub>	ML <sub>LWA</sub>	English <sub>LWA</sub>
Adjunct extraction	✓	✓	✓	✓	✓	✗
Left branch extraction	✓	✓	✓	✓	✓	✗
Scrambling	✓	✓	✓	✓	✓	✗
Negative raising NPI test	✗	✗	✗	✗	✗	✓
Negative raising <i>believe t</i>	✓	✓	✓	✓	✓	✓
Superiority effects	✗	✗	✗	✗	✓	/
Clitic doubling	✗	✓	✓	✓	✓	✗
Two adnominal genitives	✓	✓	✓	✓	✓	✓
Exhaustivity presupposition	✓	✓	✓	✓	✓	✓

Table 1: SC, PJ, SZ, TL, ML and English in comparison

As for generalization 5, that ALL do not display Superiority effects with multiple-wh fronting, it appears absolutely correct in case of the six contrasted varieties. Hungarian and TL have articles, but do not show Superiority effects, which does not violate the generalization. The question is, is the prediction that ALL do not show Superiority effects strong enough for a clear correlation with DP? If a DP language like TL or Hungarian does not show Superiority effects, as generalization 5 allows, how is this related to its structure? Again, maybe Bošković is on the right track, given the non-mandatory status of TL post-positive definite article, unlike in

ML or English. Nevertheless, the ‘bare’ NP model cannot explain the fact that SC blocks LBA and AE in some cases – this is the subject matter of the next section.

#### 4. DP in ALL SC

In this section we will take a look at some SC NPs, which indicate the presence of a functional projection sensitive for definiteness/specificity of the referent of the entire NP, located above Cinque’s (2010) projection hosting indirect modification adjectives, high inside the nominal left periphery. Based on these and the findings from the previous section, we will eventually argue in favor of a DP configuration for analyzing SC, PT and SZ noun phrases.

Cinque (2010) argues that adjectives are generated at two distinct positions: **direct modification adjectives** (DMA) are merged in the specifier position of a functional projection located immediately above NP, while **indirect modification adjectives** (IMA) are generated in a distinct, higher functional projection, as the predicate of a reduced relative clause:

(80)  $[_{DP} [_{FP1} [_{AP} IMA] [_{FP2} [_{AP} DMA] [_{NP}]]]]$

SC has two adjective forms: the **short adjective form** (SAF), encoded via the null morphological ending when modifying nominative singular masculine NPs, and **long adjective form** (LAF), bearing the *-i* morphological ending:

(81) a. dobar- $\emptyset$  student      b. dobr-i student  
           good<sub>SAF</sub> student            good<sub>LAF</sub> student  
           ‘a good student’            ‘the good student’

When used bare as predicatives, adjectives must take SAF:

(82) Projekat je pomenut/      \*pomenuti/      izvestan/      \*izvesni.  
       project is mentioned<sub>SAF</sub>    mentioned<sub>LAF</sub>    certain<sub>SAF</sub>    certain<sub>LAF</sub>  
       ‘??A/The project is mentioned / certain.’

Cinque (2010) makes a correlation between LAFs and DMAs, as well as SAFs and IMAs. The fact that SAFs and LAFs can be combined only if SAFs precede LAFs<sup>36</sup> (Leko 1992, Giusti 2006, Cinque 2010) is in line with his assumption about the existence of two types of adjectives and their respective ordering:

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<sup>36</sup> Marušič & Žaucer (2007) and Stanković (2014, 2015) show that there are reverse examples, with LAFs preceding SAFs.



- (84) a. siromašan    bolesni    dječak    b. \*siromašni    bolestan    dječak  
 (Leko 1992: 622)
- poor<sub>SAF</sub>    sick<sub>LAF</sub>    boy    poor<sub>LAF</sub>    sick<sub>SAF</sub>    boy
- ‘a poor sick boy’

Although SC lacks definite and indefinite articles, it disposes a closed set of adjective items that can mark definiteness and specificity. The adjectives *pomenuti* ‘mentioned’, *navedeni* ‘stated’, *imenovani* ‘named’ and *dati* ‘given’ indicate that the referent of the entire nominal expression is already introduced to the discourse:

- (85) pomenuti /    navedeni /    imenovani /    dati    političar    (definite)  
 (SC)
- mentioned<sub>LAF</sub>    stated<sub>LAF</sub>    appointed<sub>LAF</sub>    given<sub>LAF</sub>    politician
- ‘#a/the mentioned/stated/appointed/given politician’

All of the adjectives presented in (85) prefer LAF in order to mark definiteness of the referent of the entire NP. The same goes for the specificity marking adjectives *izvesni* ‘certain’ and *određeni* ‘determined’:

- (86) izvesni /    određeni    političar (specific)  
 certain<sub>LAF</sub>    determined<sub>LAF</sub>    politician
- ‘a certain/particular politician’

Stanković (2014b) argues that the acceptability of pseudo-oxymoronic phrases like the ones presented in (87) and (88) indicates that their antonym pairs could not be analyzed at the same syntactic level – in Spec of NP or as prenominal, left-adjoined modifiers, as argued by the proponents of the “bare” NP approach.

- (87) pomenuti    (na sastanku)    nepomenut    problem  
 mentioned<sub>LAF</sub>    on meeting    not mentioned<sub>SAF</sub>    problem
- ‘the mentioned problem not mentioned at the meeting’

- (88) izvesni    neizvestan    projekat  
 certain<sub>LAF</sub>    not certain<sub>SAF</sub>    project
- ‘a certain uncertain project’

Stanković assumes that the initial adjectives in (87) and (88) are merged as Cinque's (2010) indirect modification adjectives, and that they subsequently move to a higher functional projection where they get the definite/specific reading, behaving like definite/specific markers. Assuming that this functional projection could be (some kind of) DP, he shows that these adjectives value d-features, providing the interlocutor with information about the referential (*pomenuti* 'mentioned') or epistemic (*izvesni* 'certain') aspects of the denotation of an expression. Thus, the lexical semantics of these adjectives is interpreted at a more abstract level of the discourse, setting the features of the referential and epistemic dimension. The adjective *pomenuti* 'mentioned' specifies that the nominal expression finds a referent in the hearer's discourse domain [prox:+<sub>2nd</sub>], while *izvesni* 'certain' specifies that the nominal expression does not find a referent in the speaker's epistemic domain [epist:-<sub>1st</sub>].

Another strong indication that the presented adjectives should be analyzed in some type of DP is the blocking effect that they produce on LBE and AE<sup>37</sup>:

(89) \*Skupa<sub>i</sub> je video [pomenuta / izvesna *t<sub>i</sub>* kola].

expensive is seen mentioned certain car

'It is the mentioned / a certain expensive car that he saw.'

(90) \*Iz kojeg grada<sub>i</sub> je Ivan sreo [pomenute / izvesne devojke *t<sub>i</sub>*]?

from which city is Ivan met mentioned certain girls

'Ivan met the mentioned / certain girls from which city?'

Cinque (2010) argues that superlative and comparative morphemes are merged high in the functional structure of the DP, above IMAs, attracting the adequate adjective to move to the left periphery, which causes the superlatives/comparatives to always precede other adjectives. But, Stanković (2014b) shows that the analyzed definiteness/specificity markers always precede other adjectives, including superlatives and comparatives, which is a good indication that they must be analyzed in a distinct functional projection above NP and the projections hosting superlatives/comparatives, (91.a). If in post-superlative/comparative position, these adjectives can only have their descriptive interpretation, (91.b).

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<sup>37</sup> Veselovská (1994) shows that only initial premodifiers can be extracted in Czech. The situation is the same in S-C.

(91) a.	pomenuti	najbolji	film (definite)	b.	(?)najbolji	pomenuti	film
	(descriptive)						
	mentioned	best	movie		best	mentioned	movie
	'the mentioned best movie'				'(?)the best mentioned movie'		

The final piece of evidence that the adjectives *pomenuti* 'mentioned' and *izvesni* 'certain' should be interpreted in a distinct projection high at the nominal left periphery is the fact that they prefer LAF and can regularly precede SAFs (which can precede LAFs themselves), contrary to argued in previous literature (Leko 1992, Giusti 2006, Cinque 2010), (87)-(88).

In this section we showed some SC NPs that indicate that a functional projection sensitive for definiteness/specificity is located above Cinque's (2010) projection hosting IMAs, high at the nominal left periphery, even in ALL SC. The main argument in favor of a DP-analysis is the fact that, in the presence of definiteness and specificity markers, LBE and AE are blocked even in an article-less language like SC.

## 5. Conclusion

In this paper we reinvestigated Bošković's (2008) generalizations about the structural differences between ALL and LWA, based on which he argues that ALL do not project DP, or that **some** languages without articles do not have DP. Comparing data from SC, PJ, SZ, TL and ML (as well as English, Italian, Mandarin Chinese and Slovenian) we showed that most of the postulated generalizations appear incorrect. LWA TL and ML allow for LBE and AE, as well Japanese type of scrambling, they fail on the clause-mate NPIs test of negative-raising, their possessives can occur in predicative position and they can't be modified by other possessives and adjectives in pronominal position, contrary to expected. ALL PJ and SZ, though, allow for clitic doubling. Finally, ALL SC allows transitive nominals with two (phonologically heavy) genitives, its pre-cardinal possessors may induce an exhaustivity presupposition, and LBE and AE are restricted over determiner-like items like the adjectives *pomenuti* 'mentioned' and *izvesni* 'certain', *contra* Bošković's (2008) generalizations. This leads us to the conclusion that the postulated generalizations fail to grasp the presented data and are rather deficit in explaining remarkable language divergence, like the one present in the three southeastern Serbian dialects and ML. There seems

to be no strict DP/NP parameter, but rather a set of structural and lexical properties with isoglosses which do not coincide, all of which can be more satisfactorily captured by the *phonologically null vs. saturated DP* approach, rather than with the “bare” NP vs. DP analysis.

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**BARE CPs AND NPs IN TURKISH\***

**Abstract:** This paper proposes a unified treatment for so-called “finite embedded” clauses in Turkish, i.e., embedded clauses that exhibit a subject with nominative case and a verb with both tense and (verbal) agreement features. It is shown that so-called “finite embedded clauses” are, in fact, embedded root clauses (ERCs), sharing core features with their counterparts in other languages (such as V2 in German) and that ERCs are assertive, non-presuppositional clauses, introducing new information into the discourse. The paper further unveils the parallelism that exists between such “finite clauses” and bare object NPs (BONPs) in Turkish. Extending Diesing’s Mapping Hypotheses (1992) to CPs, it is argued that ERCs, much like BONPs, are within the nuclear scope of the quantification structure. Finally, this novel view of ERCs provides a straightforward explanation as to why subjects of ERCs may appear with accusative case marking: puzzling accusative marked subjects of such clauses always result from an information-structure related movement, where both the contextual and morphological aspects of the phenomenon are reduced to the fundamentals of the proposed account of ERCs.

**Key words:** *CP, NP, finite embedded clauses, embedded root clauses, Turkish.*

**1. Introduction**

The most common embedded-clause pattern in Turkish is the ‘native’ nominalized complement clause (NCC), shown in (1). Such a clause is case-marked, has a genitive subject and nominal agreement on the verb:

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Some Abbreviations used in the text: Nom=Nominative, Gen=Genitive, Abl=Ablative, Loc=Locative, Dat=Dative, Acc=Accusative, 1Sg=1<sup>st</sup> person verbal agreement, 1SgN=1<sup>st</sup> person nominal/ possessive agreement, DIK=one of the nominalizers in Turkish, Subj=Subjunctive, Neg=Negation. Further note that capital vowels indicate alternations in vowel quality due to vowel harmony and that capital consonants indicate changes due to phonological rules.

- (1) Ahmet-Ø [Ayşe-**nin** git-tiğ-i]-**ni** san-ıyor-Ø.  
 Ahmet-Nom [Ayşe-**Gen** go-DIK-3SgN]-**Acc** believe-Prog-3Sg  
 ‘Ahmet believes that Ayşe went away/left.’

Another embedded clause pattern, though not as common in the language as the NCC, is the so-called ‘finite complement clause’ (FCC), which exhibits a nominative subject and contains a verbal agreement form (2).<sup>39</sup>

- (2) Ahmet-Ø [Ayşe-Ø git-ti-Ø] san-ıyor-Ø.  
 Ahmet-Nom [Ayşe-**Nom** go-Past-3Sg] believe-Prog-3Sg  
 ‘Ahmet believes that Ayşe went away/left.’

This paper reveals the tight relationship of two seemingly unrelated phenomena in Turkish; that of clauses such as the one in (2) and that of bare object NPs. Based on this relationship, the paper proposes a new treatment for such complement clauses, namely that of *embedded root clauses* (henceforth, ERCs). These ERCs are shown to be assertive, non-presuppositional clauses, introducing new information into the discourse. The claim is based on an extension of the Mapping Hypothesis (Diesing, 1992) to CPs, where correspondences are noted between the behavior of CP complements and that of NP objects.<sup>40</sup> It is shown that Turkish ERCs share core features with their counterparts in other languages (notably V2 in Germanic) and that they are not analogous to *that*-clauses in English. While various peculiar properties of these clauses cannot be explained by their property of being finite, these properties completely follow from their status as ERCs. Finally, evidence is provided that the puzzling accusative marked subjects of such clauses always result from an information-structure related movement, where both the contextual and morphological aspects of the phenomenon are reduced to the fundamentals of the proposed account of ERCs.

In section 2, the basic properties of Turkish embedded clauses such as (2) are provided, and it is shown why the term ‘finite complement clause’ falls short and

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<sup>39</sup> Finite complement clauses have also been referred to as *direct complement clauses* (George and Kornfilt, 1981), *structure C clauses* (Kennelly, 1992), *finite complements* (Zidani-Eroğlu, 1997), *fully finite complement clauses with a null C* (Şener, 2008).

<sup>40</sup> For more information on nominalized clauses, see Predolac (2017), where the distribution of object nominalized clauses is shown to be identical to the distribution of accusative-marked NPs: both enjoy much greater freedom with respect to the positions of a clause in which they may occur.



why the term ERC is more appropriate. Section 3 then points out the parallel behavior of such ERCs with bare NP objects, and shows how various properties of such clauses can be accounted for by the Mapping Hypothesis of Diesing (1992). Section 4 provides a novel account of the accusative-marked subjects in embedded root clauses. Finally, section 5 concludes the paper.

## 2. Basic Properties of ERCs

This section shows that clauses referred to as ‘finite complement clauses’ (FCCs) in the literature are best described as *embedded root clauses (ERCs)*. The section motivates the claim that ERCs are assertions associated with new information, structurally always located within the nuclear scope of their matrix clause. To this end, the essential properties of these clauses are listed and discussed, some of which have not been noted in the literature before.

### 2.1. Formal Similarity to Root Clauses

Ignoring its distribution, the embedded clause in (2) is formally indistinguishable from the Turkish matrix clause in (3). Both exhibit nominative subjects and verbal agreement forms:

- (3) Ayşe-Ø            git-ti-Ø.  
 Ayşe-Nom        go-Past-3Sg  
 ‘Ayşe went away/left.’

A crucial difference between embedded clauses such as (2) and matrix clauses such as (3) on the one hand, and nominalized clauses such as (1) on the other, is that the former are never case-marked, whereas the latter necessarily receive case. This absence of clausal case marking will become especially relevant once ERCs are compared with (bare) object NPs in section 3.

### 2.2. Selectional Restrictions

Another crucial difference between ERCs and nominalized clauses is that every predicate that selects an ERC can also select a nominalized clause, but not vice versa.<sup>41</sup> ERCs are

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<sup>41</sup> This is analogous to the case in English (or German), where every predicate can take a *that*-clause (or a *daß*-clause in German), but not every predicate allows for complementizer deletion.

selected by a very small subset of predicates, those which are both non-factive and assertive:

- i. verbs of belief: *sanmak* ('believe', 'assume', 'suppose'), *farzetmek* ('assume'/'suppose'), *varsay-mak* ('suppose'), *zannetmek* ('believe', 'assume'), . . .
- ii. *de-mek* 'to say'<sup>42</sup>
- iii. *bil-mek* 'to know' with an *epistemic* meaning only<sup>43</sup>
- iv. volitional *iste-mek* 'to want'

Factive/presuppositional predicates cannot take ERCs:

- (4) \*Ahmet-Ø sen-Ø iş-ten kov-ul-du-n fark et-/ öğren-/ hatırla-dı-Ø  
 Ahmet-Ø you-Nom job-Abl. sack-Pass-Past-2Sg  
 notice/learn/remember-Past-3Sg  
 Intended: 'Ahmet notice/ learned/ remembered you got sacked.'

However, it is not only enough that the matrix predicate is non-factive/non-presuppositional, but the predicate has to be assertive, too. The following is an example of a non-factive, non-assertive predicate not being able to take a root clause due to its non-assertiveness:

- (5) \* [Ali git-ti-Ø] mümkün.  
 [Ali go-Past-3Sg] possible  
 Intended: 'It's possible that Ali went away/left.'

<sup>42</sup> When used with a verb of saying, the embedded clause is necessarily a representation of direct speech, and the pronoun *ben* 'I' in the embedded clause can only refer to the matrix subject:

- i. Ahmet-Ø [Ayşe-Ø git-ti-Ø] de-di-Ø.  
 Ahmet-Nom [Ayşe-Nom go-Past-3Sg] say-Past-3Sg  
 'He said Ayşe left/went away.'
- ii. Ahmet-Ø [ben-Ø git-ti-m] de-di-Ø.  
 Ahmet-Nom [I-Nom go-Past-1Sg] say-Past-3Sg  
 'Ahmet<sub>i</sub> said I<sub>i/ij</sub> left/went away.'
- iii. Ahmet-Ø [ben-im git-tiğ-im]-i söyle-di-Ø.  
 Ahmet-Nom [I-Gen go-DIK-1SgN] say-Past-3Sg  
 'Ahmet<sub>i</sub> said that I<sub>ij</sub> left/went away.'

I argue that constructions such as in (ii) are not cases of indexical shifting, but are simply quotations. This argument is based on several tests adopted from Shklovsky and Sudo (2009) (for example, embedded clauses cannot be non-verbatim, and they may not contain a wh-phrase taking the matrix scope together with shifted indexicals).

<sup>43</sup> When the verb *bilmek* 'know' selects a root clause, it never has a factive/presuppositional interpretation, but obtains an epistemic interpretation instead. This can be further attested by looking at the prominence patterns of such clauses. Due to reasons of space, I will not elaborate on this prominence pattern of ERCs.

The fact that ERCs can never occur with factive, presuppositional predicates is one of the indications that such clauses exclusively appear in the lowest partition of the quantification structure, namely the nuclear scope of the matrix clause.

### 2.3. Restriction on Negation

The main clause predicate that selects an ERC cannot be negated:<sup>44</sup>

- (6) Ben [Ayşe kazan-dı-Ø] bil-iyor-um.  
 I [Ayşe win-Past-3Sg] know-Prog-1Sg  
 ‘I believe/ know Ayşe won.’
- (7) \*Ben [Ayşe kazan-dı-Ø] bil-**m**-iyor-um.  
 I [Ayşe win-Past-3Sg] know-**Neg**-Prog-1Sg  
 Intended: ‘I don’t believe/ know Ayşe won.’
- (8) Ahmet-Ø [Ayşe-Ø git-ti-Ø] san-yor-Ø.  
 Ahmet-Nom [Ayşe-Nom go-Past-3Sg] believe-Prog-3Sg  
 ‘Ahmet believes/ thinks Ayşe went away.’

<sup>44</sup> Note that there are some exceptions to this particular restriction. These exceptions occur when (a) the matrix predicate is a verb of saying (i.e., when a quotative/direct speech interpretation emerges); (b) the matrix predicate is the volitional *istemek* and the ERC clause is a subjunctive (ii), and (c) the matrix predicate is an epistemic and in first person and the ERC clause is in the subjunctive (ii). As shown in (iv), the particular subjunctive form that occurs in ERCs, such as in (iii), is the subjunctive form that appears in root/ matrix clauses, such as in (iv).

- i. [Ayşe kazan-dı-Ø] **de-me**-di-m. ii. [Ayşe kazan-mış ol-**sun**] **san-mi**-yor-um.  
 [Ayşe win-Past-3Sg] **say-Neg**-Past-1Sg [Ayşe win-Rep.Past Be-**Subj3Sg**]  
**believe-Neg**-Prog-1Sg  
 ‘I didn’t say Ayşe won.’ ‘That Ayşe should have won, I/we don’t believe it.’
- iii. [Ayşe kazan-**sin**] **iste-me**-m. iv. Ayşe kazan-**sin**.  
 [Ayşe win-**Subj3Sg**] **want-Neg**-1Sg Ayşe win-**Subj3Sg**  
 ‘For Ayşe to win, I wouldn’t want it.’ ‘Ayşe should win.’

The issue as to why negation of a matrix predicate is allowed in cases where the ERC is in the subjunctive is left aside for now. However, it should be noted that that negated epistemics may select for an embedded main clause that is in the subjunctive only is not a phenomenon restricted to Turkish. In German, too, V2 is ruled out under negation unless the subordinated clause is in subjunctive mood (Meinunger, 2006):

- v. Ich glaube **nicht**, \*er hat recht / **dass** er recht hat.  
 I believe **not**, \*he has right / **that** he right has  
 ‘I don’t believe he’s right.’
- vi. Glaube ja **nicht**, du **kämst** ungeschoren davon!  
 believe PRT not you **come-SUBJ** unshorn away  
 ‘Don’t think that you’ll get off lightly!’

A similar phenomenon might be cases of polarity subjunctives in some Romance languages, where negated epistemic predicates in the first person require a subjunctive complement.

- (9) \*Ahmet-Ø [Ayşe-Ø git-ti-Ø] san-**m**-iyor-Ø.  
Ahmet-Nom [Ayşe-Nom go-Past-3Sg] believe-**Neg**-Prog-3Sg  
Intended: ‘Ahmet doesn’t believe/ think Ayşe went away.’

This restriction on negation is expected, as a negated matrix predicate would entail that the content of the proposition in the ERC is already part of the common ground, which is not compatible with the assertive, non-presuppositional character of such clauses.

## 2.4. Incompatibility with Presupposition Triggers

It was noted above that factive predicates are not compatible with ERCs. Factives, however, are not the only presupposition triggers that exhibit this incompatibility. Presupposition triggers, such as ‘even’, ‘also’, ‘too’ are also banned from occurring with ERCs:<sup>45</sup>

- (10) \*Ahmet [Ayşe-Ø Londra-ya git-ti-Ø] **bile** bil-iyor-Ø.  
Ahmet [Ayşe-Nom Londra-Dat go-Pst-3Sg] **even** know-Prog-3Sg  
Intended: ‘Ahmet even knows that Ayşe went to London.’

- (11) \*Ahmet **bile** [Ayşe-Ø Londra-ya git-ti-Ø] bil-iyor-Ø.  
Ahmet **even** [Ayşe-Nom Londra-Dat go-Pst-3Sg] know-Prog-3Sg  
Intended: ‘Even Ahmet knows that Ayşe went to London.’

- (12) \*Ahmet **de** [Ayşe-Ø Londra-ya git-ti-Ø] bil-iyor-Ø/san-iyor-Ø.  
Ahmet **too** [Ayşe-Nom Londra-Dat go-Pst-3Sg] know-Prog-3Sg/believe-Prog-3Sg  
Intended: ‘Ahmet, too, knows/believes that Ayşe went to London.’

- (13) \*Ahmet [Ayşe-Ø Londra-ya git-ti-Ø] **de** bil-iyor-Ø/san-iyor-Ø.  
Ahmet [Ayşe-Nom Londra-Dat go-Pst-3Sg] **tooknow**-Prog-3Sg/believe-Prog-3Sg  
Intended: ‘Ahmet also knows/believes that Ayşe went to London.’

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<sup>45</sup> The sentences in (10) and (13) could be ruled out on the basis that ERC clauses have to be adjacent to their selecting predicate. This fixed position of ERCs is discussed in 2.6.

Compare these cases with nominalized counterparts, which can occur freely with such presupposition triggers:

- (14) Ahmet [Ayşe-nin Londra-ya git-tiğ-i]-ni **bile**  
 bil-iyor-Ø.  
 Ahmet [Ayşe-Gen Londra-Dat go-DIK-3SgN]-Acc **even**  
 know-Prog-3Sg

‘Ahmet even knows that Ayşe went to London.’

- (15) Ahmet **bile** [Ayşe-nin Londra-ya git-tiğ-i]-ni  
 bil-iyor-Ø.  
 Ahmet **even** [Ayşe-Gen Londra-Dat go-DIK-3SgN]-Acc  
 know-Prog-3Sg

‘Even Ahmet knows that Ayşe went to London.’

- (16) Ahmet **de** [Ayşe-nin Londra-ya git-tiğ-i]-ni  
 bil-/san-iyor-Ø.  
 Ahmet **too** [Ayşe-Gen Londra-Dat go-DIK-3SgN]-Acc  
 know/believe-Prog-3Sg

‘Ahmet, too, knows/believes that Ayşe went to London.’

- (17) Ahmet [Ayşe-nin Londra-ya git-tiğ-i]-ni **de**  
 bil-/san-iyor-Ø.  
 Ahmet [Ayşe-Gen Londra-Dat go-DIK-3SgN]-Acc **too**  
 know/believe-Prog-3Sg

‘Ahmet also knows/believes that Ayşe went to London.’

Since ERCs are assertions, i.e., they are within the nuclear scope of their matrix clause, it is not surprising that the use of presupposition triggers with such clauses is ruled out.

## 2.5. Discourse Conditions

An ERC cannot be used if its proposition was already mentioned (or assumed) in the discourse, as shown in (18a). In such contexts, only a nominalized clause can be used (18b).

(18) Lale: Nihayet! Ahmet ehliyet sınavını geçti!

Lale: Finally! Ahmet passed his driver's license exam!

Selin:

a. Evet. # [Ahmet sınav-ı geç-ti-Ø] biliyorum.  
Yes [Ahmet exam-Acc pass-Past-3Sg] know-Prog-1Sg  
Intended: 'Yes. I know that Ahmet passed the exam.'

b. Evet. [Ahmet-in sınav-ı geç-tiğ-in]-i biliyorum.  
Yes [Ahmet-Gen exam-Acc pass-DIK-3SgN]-Acc know-Prog-

1Sg

'Yes. I know that Ahmet passed the exam.'

This restriction, too, shows that ERCs have to introduce new information.

## 2.6. Fixed Position

ERCs and nominalized clauses are also distinct when it comes to positions in which they are allowed to occur. The position of ERCs is restricted to the immediate left of the verb, which is the focus position in Turkish. NCCs, however, enjoy much greater freedom regarding the positions within a clause in which they may occur. Thus, NCCs, but not ERCs, can be either topicalized or backgrounded:

(19)ERC

Ayşe [Ahmet iş-ten kov-ul-du-Ø] bil-iyor-Ø.

Ayşe [Ahmet work-Abl fire-Pass-Past-3Sg] know-Prog-Past-3Sg

'Ayşe knows that Ahmet was fired.'

(20)ERC, *Topicalized*

\* [Ahmet iş-ten kov-ul-du-Ø] Ayşe bil-iyor-Ø.

[Ahmet work-Abl fire-Pass-Past-3Sg] Ayşe know-Prog-Past-3Sg

Intended: 'That Ahmet was fired Ayşe knows.'

(21) *ERC, Backgrounded*

\*Ayşe bil-iyor-Ø [Ahmet iş-ten kov-ul-du-Ø].  
 Ayşe know-Prog-Past-3Sg [Ahmet work-Abl fire-Pass-Past-3Sg]  
 Intended: ‘Ayşe knows (it) that Ahmet was fired.’

(22) *NCC*

Ayşe [Ahmet-in iş-ten kov-ul-duğ-un]-u  
 bil-iyor-Ø.  
 Ayşe [Ahmet-Gen work-Abl fire-Pass-DIK-3SgN]-Acc  
 know-Prog-Past-3Sg  
 ‘Ayşe knows that Ahmet was fired.’

(23) *NCC, Topicalized*

[Ahmet-in iş-ten kov-ul-duğ-un]-u Ayşe  
 bil-iyor-Ø.  
 [Ahmet-Gen work-Abl fire-Pass-DIK-3SgN]-Acc Ayşe  
 know-Prog-Past-3Sg  
 ‘That Ahmet was fired Ayşe knows.’

(24) *NCC, Backgrounded*

Ayşe bil-iyor-Ø [Ahmet-in iş-ten  
 kov-ul-duğ-un]-u.  
 Ayşe know-Prog-Past-3Sg [Ahmet-Gen work-Abl  
 fire-Pass-DIK-3SgN]-Acc  
 ‘Ayşe knows (it) that Ahmet was fired.’

These facts are also accounted for by referring to the assertive, non-presuppositional character of ERCs. In Turkish, elements that are backgrounded, i.e., elements that appear in post-verbal position, are presupposed, given material. Topicalized elements are also presuppositional. Thus it is not surprising that, being

elements that introduce new information, ERCs can neither occur in backgrounded nor topicalized positions.

Further note that an adverb cannot intervene between an ERC and its selecting predicate:

(25) *ERC with Matrix Adverb*

Ayşe **hemen** [Ahmet iş-ten kov-ul-du-Ø] de-di-Ø.  
Ayşe **quickly** [Ahmet work-Abl fire-Pass-Past-3Sg] say-Past-3Sg  
'Ayşe quickly said Ahmet was fired.'

(26) *ERC with Intervening Matrix Adverb*

\*Ayşe [Ahmet iş-ten kov-ul-du-Ø ] **hemen** de-di-Ø.  
Ayşe [Ahmet work-Abl fire-Pass-Past-3Sg] **quickly** say-Past-3Sg  
Intended: 'Ayşe quickly said Ahmet was fired.'

(27) *Nominalized Clause with Matrix Adverb*

Ayşe **hemen** [Ahmet-in iş-ten kov-ul-duğ-un]-u söyle-di-Ø.  
Ayşe **quickly** [Ahmet-Gen work-Abl fire-Pass-DIK-3SgN]-Acc say-Past-3Sg  
'Ayşe quickly said that Ahmet was fired.'

(28) *Nominalized Clause with Intervening Matrix Adverb*

Ayşe [Ahmet-in iş-ten kov-ul-duğ-un]-u **hemen** söyle-di-Ø.  
Ayşe [Ahmet-Gen work-Abl fire-Pass-DIK-3SgN]-Acc **quickly** say-Prog-Past-3Sg  
'Ayşe quickly said that Ahmet was fired.'



Assuming that the adverb *hemen* ‘quickly’ is at the edge of the matrix VP, we can conclude that the ERC has to remain within the VP. Thus, once again we see that ERCs must be within the nuclear scope of the matrix clause.

## 2.7. Similarity with German ERCs

Ever since Hooper and Thompson (1973), it has been suggested that there is a connection between the use of root phenomena in embedded clauses and assertion, which led to extensive discussions in Germanic linguistics (Wechsler 1991, Heycock 2005, among others). Meinunger (2006) and Schwabe (2007) present evidence that ERCs in German are, in fact, assertions. Note how the distribution of ERCs in Turkish resembles that of German ERCs:

Verbs/constructions allowing for V2	Verbs/ constructions not allowing for V2
Verbs of saying	Factive verbs (emotive, truly factive predicates)
Evidential predicates	Semantically complex, negative verbs
Verbs of thinking	Causative implicative verbs
Semi-factive verbs	Under negation
??volitional predicates	If the embedded proposition is discourse old

**Table 1:** Types of predicates and embedding of root (V2) clauses in German (Meinunger, 2006, p. 466)

To conclude this section, what makes clauses referred to in the literature as ‘finite complement clauses’ in Turkish special and distinctive is not the fact that they are ‘finite’, as the term finiteness is not a notion that captures the above mentioned restrictions. Rather, the restrictions mentioned above follow from the fact that these embedded clauses are in fact ERCs.

Next, the focus is on the similarities that ERCs and bare object NPs in Turkish share. These similarities provide yet another piece of evidence that ERCs are assertions. Assuming the Mapping Hypothesis of Diesing (1992), ERCs will be shown to be non-presuppositional (assertive) clauses, occurring exclusively within the nuclear scope, just like bare object NPs. In contrast, NCCs, which are free to

occur in the restrictive clause of the quantification structure, pattern with accusative-marked object NPs.

### 3. The Parallelism of Bare Object NPs and ERCs

It is frequently stated in the literature that an object NP in Turkish may or may not be marked with the accusative case -I. The presence or absence of this accusative marker has semantic correlates. The object NP marked with the accusative case marker -I, (29a), has often been characterized as ‘specific’, and the object NP with no case marking, (29b), a.k.a. Bare Object NP (BONP), as non-specific, or existential (see Enç, 1991, among others, on this):

- (29) a. Ali bir kitab-**ı** aldı.  
Ali one book-**Acc** bought  
‘A book is such that Ali bought it.’

- b. Ali bir kitap aldı.  
Ali one book bought  
‘Ali bought some book or other.’

(Enç, 1991)

Analyzing data from Enç (1991), Diesing (1992) shows that the ‘specific’ reading, in fact, involves a presuppositional interpretation of the NP.<sup>46</sup> Moreover, according to Diesing’s Mapping Hypothesis, Turkish BONPs, being non-presuppositional, occur exclusively within the nuclear scope of the quantification structure.

Given the already established non-presuppositionality of ERCs, it is thus expected that there is a parallelism between ERCs and bare object NPs in this respect. And the parallelism indeed exists both morphologically and distributionally. First, it has already been mentioned in section 2 that object ERCs (which are always assertions

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<sup>46</sup> Also note that, as shown by Diesing, object NPs that have ‘strong’ (or presuppositional) determiners require the accusative marker:

- i. Ali **her** kitab-**ı** okudu.  
Ali **every** book-**Acc** read  
‘Ali read every book.’  
ii. \*Ali **her** kitab okudu.

and introduce new information) lack accusative case, while nominalized object clauses (which can be presuppositional) necessarily receive it. It is argued here that the lack of the accusative marker does not only have the function of signaling non-presuppositionality in the case of NPs, but that it also has the function of signaling non-presuppositionality (assertiveness) of CPs. Second, both BONPs and ERCs can only occur to the immediate left of the verb, unlike their accusative-marked counterparts. This was already illustrated for ERCs in section 2.6. The examples below show that this is the case with BONPs as well. Neither topicalization nor backgrounding is possible with BONPs:

(30) *BONP and Accusative-marked Object NP in Canonical Position*

Ali kitab-Ø/-**ı** okudu.

Ali book-Ø/-**Acc** read

‘Ali read a/the book.’

(31) a. *Topicalized BONP  
Object NP*

\* Kitap-Ø Ali okudu.

Book-Ø Ali read

Intended: ‘The book, Ali read.’

b. *Topicalized Accusative-marked*

Kitap-**ı** Ali okudu.

Book-**Acc** Ali read

‘Ali read the book.’

(32) a. *Backgrounded BONP  
NP*

\*Ali okudu kitab-Ø

Ali read book-Ø

Intended: ‘Ali read the book.’

b. *Backgrounded Accusative-marked Object*

Ali okudu kitab-**ı**.

Ali read book-**Acc**

‘Ali read the book’

Furthermore, no adverb can come in between the BONPs and the selecting predicate:

(33) *BONP and Accusative-marked Object NP in Canonical Position with Adverb*

Ali **hep** kitab-Ø/-**ı** aldı.

Ali **always** book-Ø/-**Acc** bought

‘Ali always bought/ took the/a book.’



(36) *Accusative-Marked Subject, ERC*<sup>48</sup>

Ahmet-Ø          sen-**i**          git-ti-(**n**)          san-ıyor-Ø.  
 Ahmet-Nom      you-**Acc**      go-Past-**2Sg**      believe-Prog-3Sg  
 ‘Ahmet believes you to have gone away/left.

#### 4.1. Previous Accounts

The accusative case marker on the subject (36) has led to assumptions that these embedded clauses are analogous to English ECM/SOR constructions (37):

(37) John believes **her**<sub>acc</sub> to have left<sub>nonfinite clause</sub>.

It is standardly assumed for sentences in (37) that the subject of such non-finite clauses cannot receive Case (nominative) in the non-finite embedded clause and has to receive accusative Case to satisfy the Case Filter. A somewhat similar treatment has been given to sentences in (36): it is argued that the embedded clause in (36) is non-finite despite the presence of tense on the embedded verb. What makes the clause non-finite in Turkish is the lack of Agr features. Since (36) lacks Agr features responsible for nominative Case in Turkish, the thematic subject of the embedded clause needs to receive Case other than nominative (George and Kornfilt 1981, Zidani-Eroğlu 1997, Kornfilt 2007, among others). In other words, the suggestion for Turkish is that it is not tense that determines whether a clause is finite or not but, rather, that finiteness is dependent on agreement: the lack of agreement renders the clause non-finite, whereas its presence ensures that the clause is finite (George and Kornfilt 1981; Kornfilt 2007, among others). Hence, the embedded subject appears with the accusative marking.

Crucially, the Case Filter approach cannot explain the availability of two Case forms for the subject. Next, while the grammar allows for both possibilities, the choice between accusative and nominative case on such subjects, however, is not entirely optional and has semantic consequences, which will be discussed in more detail in section 4.2.3. In this respect, the Case Filter approach cannot account for the correlation of the two forms with distinct discourse conditions.

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<sup>48</sup> The agreement in (36) is indicated as optional, but not everyone shares this judgement. Kornfilt (1977) suggests that there is a dialectal difference between Turkish speakers with respect to whether they find sentences such as (36) with or without agreement on the ERC verb grammatical. Aygen (2002), Kural (1993), Şener (2008) suggest there is no dialectal difference and that agreement is optional.

The account proposed here is radically different in that the Case Filter is not seen as motivation for movement. It is instead shown that the movement and the accusative marking of subjects are motivated by information structure.

## 4.2. Accusative-Marked Subjects and Information Structure Movements

In this section, it is argued that the accusative case marker on subjects of ERCs follows from the analyses of ERCs and the accusative case marker presented in sections 2 and 3, with a single addition of independently motivated movements, namely topicalization and backgrounding.

In a nutshell, when topicalized or backgrounded, the subject of an ERC must leave the nuclear scope of the matrix clause, while the ERC itself necessarily remains in the nuclear scope. Once the embedded subject moves into the restrictive clause (i.e., the restrictive clause of the matrix clause), it structurally becomes the object of the matrix verb. The relevant constituent, which is at the same time the semantic argument of the embedded verb and the structural object of the matrix verb, is presuppositional in the discourse, because all topicalized and backgrounded elements are necessarily presuppositional. As such, the moved NP must receive the accusative marking reserved for presuppositional object NPs.

### 4.2.1. Interaction of Accusative-marked Subjects with Adverbs

The manner in which the accusative marked subject interacts with matrix adverbs shows that the accusative marked subject is in the matrix clause, that is, that it receives accusative case in the matrix clause, rather than in the ERC. For example, the imperfective temporal adverb *sabahtan beri* ‘since this morning’ can be used with only imperfective predicates (Kornfilt, 1977; Zidani-Eroğlu, 1997; examples from Zidani-Eroğlu, 1997):

- (38) \* Zeynep-Ø        **sabah-tan beri**    öp-ül-dü-Ø.  
         Zeynep-Nom    **morning-Abl**    **since** kiss-Pass-Past-3Sg  
         ‘Zeynep was kissed since this morning.’

- (39) Zeynep-Ø        **sabah-tan**        **beri**    öp-ül-üyor-Ø.  
         Zeynep-Nom    **morning-Abl**    **since**    kiss-Pass-Prog-3Sg  
         ‘Zeynep is being kissed since this morning.’

When this temporal adverb precedes the ERC, it modifies the imperfective matrix predicate:

- (40) (Siz) **sabah-tan** **beri** [Ali-Ø öp-ül-dü-Ø] san-  
**iyor-sunuz.**  
 You-nom **morning-abl** **since** [Ali-Nom kiss-Pass-Past-3Sg] believe-  
**Prog-2Pl**  
 ‘You have been thinking since this morning that Ali was kissed.’
- (41) \*(Siz) [Ali-Ø **sabah-tan** **beri** öp-ül-**dü**-Ø]  
 san-iyor-sunuz.  
 You-nom [Ali-Nom **morning-abl** **since** kiss-Pass-**Past**-3Sg]  
 believe-**Prog-2Pl**  
 Intended: ‘You have been thinking since this morning that Ali was kissed.’
- (42) (Siz) Ali-**yi** **sabah-tan** **beri** öp-ül-dü san-**iyor-**  
**sunuz.**  
 You-nom Ali-**Acc** **morning-abl** **since** kiss-Pass-Past-3Sg believe-  
**Prog-2Pl**  
 ‘Since this morning you have been believing Ali to have been kissed.’

For Zidani-Eroğlu (1997) this indicates that the adverb is in the matrix clause, and thus, the ‘ECM NP’ *Ali-yi* must occupy a position in that clause as well.<sup>49</sup>

#### 4.2.2. Word Order Variations of Accusative Subjects

In 2.6, it was demonstrated that the position of ERC is fixed, and this was attributed to the fact that ERCs are asserted, non-presuppositional elements, which must remain within the nuclear scope. The summary is provided in the table below:

default position	John [Mary-Nom book bought] believes.
when topicalized	*[Mary-Nom book bought] John believes.
when backgrounded	*John believes [Mary-Nom book bought].

**Table 3:** Embedded Root Clause (ERC) Positions

<sup>49</sup> Zidani-Eroğlu (1997) further defends this view by presenting data that show how the frequency adverb *sık sık* ‘often, frequently’ interacts with the Accusative marked subjects and the other elements in the sentence.

Accusative-marked ERC subjects do not have to appear in a fixed position. It was already shown that they may be followed by an adverb which may modify the matrix verb (42). Essentially, the accusative marked subject can be topicalized or backgrounded:

- (43) *Topicalized Subject with Acc-marking*  
 Ben-Ø **Ahmet-i<sub>i</sub>** [t<sub>i</sub> okul-a git-ti] bil-iyor-um.  
 I-Nom **Ahmet-Acc** [ school-Dat go-Past] believe-Prog-1Sg  
 ‘I believe Ahmet to have gone to school.’
- (44) *Topicalized Subject with Acc-marking*  
**Ahmet-i<sub>i</sub>** ben-Ø [t<sub>i</sub> okul-a git-ti] bil-iyor-um.  
**Ahmet-Acc** I-Nom [ school-Dat go-Past] believe-Prog-1Sg  
 ‘I believe Ahmet to have gone to school.’
- (45) *Backgrounded Subject with Acc-marking*  
 Ben-Ø [t<sub>i</sub> okul-a git-ti] bil-iyor-um **Ahmet-i<sub>i</sub>**.  
 I-Nom [ school-Dat go-Past] believe-Prog-1Sg **Ahmet-Acc**  
 ‘I believe Ahmet to have gone to school.’

Note that nominative-marked embedded subjects do not have this property:

- (46) Ben-Ø [Ahmet-Ø okul-a git-ti-Ø] bil-iyor-um.  
 I-Nom [Ahmet-Nom school-Dat go-Past-3Sg] believe-Prog-1Sg  
 ‘I believe Ahmet to have gone to school.’
- (47) \*Ahmet-Ø<sub>i</sub> ben-Ø [t<sub>i</sub> okul-a git-ti-Ø] bil-iyor-um.  
 Ahmet-Nom I-Nom [ school-Dat go-Past-3Sg] believe-Prog-1Sg  
 Intended: ‘I believe Ahmet to have gone to school.’
- (48) \* Ben-Ø [t<sub>i</sub> okul-a git-ti-Ø] bil-iyor-um Ahmet-Ø<sub>i</sub>.  
 I-Nom [ school-Dat go-Past-3Sg] believe-Prog-1Sg Ahmet-Nom  
 Intended: ‘I believe Ahmet to have gone to school.’

The fact that accusative-marked subjects can be topicalized and backgrounded is yet another indication that they are presuppositional elements, just like any other accusative-marked item—whether object NP or CP. Note that, although the accusative-marked subject can be topicalized or backgrounded, the ERC from which they originate is still restricted to the preverbal position:



- (49) \* **Ahmet-*i***      ben-Ø    *t<sub>j</sub>* bil-iyor-um      [*t<sub>i</sub>* okul-a git-ti]<sub>*j*</sub>.  
**Ahmet-Acc**    I-Nom      believe-Prog-1Sg [ school-Dat go-Past]  
 ‘I believe Ahmet to have gone to school.’

In other words, while the accusative-marked subject is in the restrictive clause of the matrix clause, the ERC remains within the nuclear scope of the matrix clause.

### 4.2.3. Discourse Conditions

It can be further confirmed that subjects marked with accusative case are presuppositional elements by examining the discourse conditions in which they may occur. In the context given in example (50), the subject of the embedded clause, *kırlangıç* ‘swallow’, is necessarily non-presuppositional, hence accusative marking on this subject results in ungrammaticality (50b):

- (50) Ali: Ahmet’in camı çok çamurluymuş.  
 Ali: Ahmet’s window is supposedly very muddy.  
 Selin: Niye, ne olmuş?  
 Selin: Why, what happened?  
 Ali:  
 a. Ahmet [bir    kırlangıç-Ø      yuva    yap-tı-Ø]      san-ıyor-Ø.  
    Ahmet [a    swallow-**Nom**    nest    make-Pst-3Sg]    believe-Prog-3Sg  
    ‘Ahmet believes that a swallow made a nest.’  
 b. \*Ahmet [(bir) kırlangıç-ı      yuva    yap-tı-Ø]      san-ıyor-Ø.  
    Ahmet [(a) swallow-**Acc**    nest    make-Pst-3Sg]    believe-Prog-3Sg  
    Intended: ‘Ahmet believes that a swallow made a nest.’

The context provided in (51) requires that the subject of the embedded clause be a presuppositional element. We thus see that the subject must be marked with the accusative case and that an ERC with a nominative subject is infelicitous in such a context:

- (51) Ahmet did not hear or see the swallow living on his balcony for quite some time.  
 He                    started to think that his cat ate the swallow. One day his wife Eylem says to him:  
 Eylem: Did you notice that the swallow made a mess on the windows again?  
 Ahmet:  
 a. Olamaz.      Ben [kırlangıç-ı      öl-dü-Ø]      bil-iyor-um.  
    Impossible. I      [swallow-**Acc**    die-Pst-3Sg]    believe-Prog-1Sg  
    ‘Impossible. I believe (for) the swallow to have died.’

- b. Olamaz. # Ben [(bir) kırılacağı-Ø öl-dü-Ø] bil-iyor-um.  
Impossible. I [(a) swallow-Nom die-Pst-3Sg] believe-Prog-  
3Sg  
Intended: ‘Impossible. I believe the swallow has died.’

The fact that the presence or absence of the accusative marking on ERC subjects has semantic/pragmatic consequences once again shows that the choice between accusative-marked ERC subjects and nominative-marked ERC subjects is not optional.

It is concluded then that movement of the accusative-marked subject of an ERC (i.e., from the nuclear scope) into the matrix clause (i.e., the restrictive clause) is not due to reasons of case but is solely due to information structure.

## 5. Conclusion

Systematic restrictions exhibited by so-called ‘finite complement clauses’ (FCCs) in Turkish follow from the fact that these clauses are in fact embedded root clauses (ERCs). These ERCs are shown to be assertions, introducing new information into the discourse. They share core features with their counterparts in other languages, notably V2 in Germanic. It was further demonstrated that the discourse conditions, morphological marking and structural distribution of ERCs mirror those of Bare Object NPs (BONPs) in the language: Turkish ERCs, much like BONPs, are non-presuppositional, do not have an accusative case marker and are exclusively within the nuclear scope of the quantification structure. Finally, under the proposed analysis, accusative-marked subjects that may occur in such ERCs receive a natural explanation: such subjects are topical or backgrounded elements, and are thus located within the restriction clause, outside of their originating ERC. The accusative marking is the combined result of their new structural position of the matrix verb’s object on the one hand, and their presuppositionality on the other.

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## DP-INTERNAL OPERATORS AND THEIR SCOPAL INTERACTION WITH OPERATORS OF THE VERB<sup>51</sup>

**Abstract:** In Hungarian generative literature, serious attention is paid to information structure, but the seminal works (e.g. Brody & Szabolcsi 2003, É. Kiss & Kiefer 1994, É. Kiss 2002, Surányi 2011) only focus on the operator zone belonging to the verb. We establish that, in certain cases, it is rewarding to assume DP-internal semantic operators. Our standpoint is that three types of nominal heads can have a complement zone: deverbal nouns, *story/picture* nouns, and relational nouns. We argue that in the case of a deverbal noun the complement zone accommodates an argument structure (which is capable of scopal interaction with the verb's argument structure), whilst non-deverbal nominals have only conceptual arguments. First, we examine the behavior of the possessor, since the literature considers it a unique dependent of the noun head (Laczkó&Szabolcsi 1992). We found that the quantified possessor of a deverbal noun can take scope over the matrix verb; however, it can take the narrowest sentence scope, if it is given a special rising intonation contour typical of contrastive topic. The paper provides a systematic overview of which DP-internal and DP-external positions accommodate which of the inherent operators belonging to the nominal head. Our test shows that non-possessor arguments can also take narrow scope. As a general conclusion, it can be said that there are at least two possible strategies assigned to a nominal argument: it can stay after its head to show its argumenthood; or it can move to an operator position to fulfill its function.

**Key words:** *nominal complements, deverbal nouns, possessor, DP-internal operators, scopal ambiguity.*

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## 1. Introduction and Aim

This paper argues that in certain cases it is rewarding to assume DP-internal operators which engage in scopal interaction with the operators of the verb. This approach is motivated by the fact that the seminal works of Hungarian generative literature (e.g. Brody & Szabolcsi 2003, É. Kiss 2002, Surányi 2011) only focus on the operator zone that belongs to the verb, although semantic operators can also appear in the DP-domain in Hungarian. In example (1) the nominal head *meghívás* ‘invitation’ has an argument, the dative case-marked possessor (*Marinak*), standing within the DP, before the definite article in the (surface) word order. This possessor can be combined with the focus particle *csak* ‘only’ (1a), with the quantifier *mindkét* ‘both’ (1b), and with the particle *is* ‘also’ (1c), respectively. The particles and the quantifier are good indicators of the presence of semantic operators in the phrase.

(1) DP-internal (semantic) operators

- a. Elleneztem [DP *csak Marinak* a meghívását].  
disagreed.1Sg only Mari.Dat the invitation.Poss.3Sg.Acc  
‘I was against the idea of inviting only Mari (i.e. Mari alone).’
- b. Elleneztem [DP *mindkét lánynak* a meghívását].  
disagreed.1Sg both girl.Dat the invitation.Poss.3Sg.Acc  
‘I was against the idea of inviting both of the girls.’
- c. <sup>?</sup>Elleneztem [DP *Marinak is* a meghívását].  
disagreed.1Sg Mari.Dat also the invitation.Poss.3Sg.Acc  
‘I was against the idea of inviting Mari as well.’

It could be thought that the scope of the DP-internal operators corresponds to simple structural relations in the syntax. However, the paper will show that their interpretations depend on many other factors. Our aim is to present new data which have not been described in the literature until now.

## 2. Background

### 2.1. Complement zone of noun heads?

In the Hungarian generative literature three different concepts can be found relating to the postnominal complement domain.

The first one (which argues against a complement zone, Szabolcsi&Laczkó 1992) is based on the so called Focus Test as a Constituency Test. Example (2) shows the application of the test to the Hungarian noun phrase, and concludes that the possessors *Péter* and *Péternek* do not appear in the complement zone of the N head, since they do not make up a single constituent in a focus construction.

(2) The application of the Focus Test to the Hungarian noun phrase

- a. \*[A kalapja<sub>N</sub> Péter] vezett el. (Szabolcsi & Laczkó 1992:190, (10a-b))  
 the hat.Poss.3Sg Péter lost away  
 intended meaning: 'It is Peter's hat that has been lost.'
- b. \*[A kalapja<sub>N</sub> Péternek]<sub>Focus</sub> vezett el.  
 the hat.Poss.3Sg Peter.Dat lost away  
 intended meaning: 'It is Peter's hat that has been lost.'

Nevertheless, the focus construction is not suitable for this task, since it refuses any sort of "right branching" from the head, as can be seen in (3). The subordinate clause is part of the DP, but it appears in a postverbal domain if its head stands in a focus position (for more details and examples, see Alberti & Farkas (2013:20).

(3) The application of the Focus Test to right branching phrases (Subordinate Clause in a DP: [... N CP])

- a. Ki hívott meg? <sup>\*</sup>[<sub>F</sub> Az a lány, akivel tegnap találkoztunk], hívott meg.  
 who invited Perf that the girl who.Ins yesterday met.1Pl invited perf
- b. Ki hívott meg? [<sub>F</sub> Az a lány] hívott meg, akivel tegnap találkoztunk.  
 who invited perf that the girl invited perf who.Ins yesterday met.1Pl  
 'Who invited you?' 'The one who invited me was the girl we met yesterday.'

Also Szabolcsi and Laczkó (1992: 257–258) accept many examples which seem to violate the “no complement” concept. Examples (4a,b) clearly show that arguments of derived nouns occur more naturally in the postnominal position than adjuncts.

(4) Arguments / adjuncts after the N head

- a. János megérkezése Pestre / <sup>?</sup>Máriával ma is beszédtema.  
 János arrival.Poss.3Sg Pest.Sub/ Mária.Ins today also topic  
 'János's arrival in Pest / with Mária is still a hot topic.'
- b. A fiúk találkozása Máriával / <sup>?</sup>Pesten ma is beszédtema.  
 the boy.Pl meeting.Poss.3Sg Mária.Ins/ Pest.Sub today also topic  
 'The boys' meeting with Mária / in Pest is still a hot topic.'

According to the theory of É. Kiss (1998), it is not excluded that the N head has a complement in some "deep structure", but in the "surface structure" it must be empty. She suggests that NPs have a similar structure to VPs, but arguments cannot stand after an N head because of the Constraint on Case Assignment (É. Kiss 1998:77). This rule establishes that

- a. The case marker of an NP appears on the right edge of this NP.
- b. The case marker cliticizes on the head of the NP or, in the case of an empty head, it cliticizes on the constituent preceding the head.

Furthermore, É. Kiss (1998) argues for VP-contraction: The verb takes every constituent that (originally/semantically) belonged to the complement of any other constituent in its complement.

However, if the constituents are extracted from their N-head, the so-called Behaghel's Law can be applied. This law predicts the optimal order of the complements of V on the right periphery of the Hungarian sentence so that heavier complements should appear right to less heavier complements.

To make it clear how many constituents must be taken into account, it is rewarding to choose very heavy N-complements. The result of the application of Behaghel's Law speaks for itself: (5a) does not violate the law of Behaghel, but it is not well-formed. On the contrary, (5b) is perfect, although the law is violated if we accept the theory of É. Kiss (1998) and suppose that there are four DPs in (5). It follows from this that there are only two DPs belonging to the noun head and that they are not extracted from the complement zone of this head.

(5) "Behaghel Test" on the constituent status of noun phrases with non-empty N-complements (c.f. É. Kiss 2009)

- a. \*Elmondattad végül  
[Móricztól]  
[a három tehénről]  
[a gyerekkorunkból ismert tréfás kis verset]  
[a két kis cserfes hódmezővásárhelyi unokahúggal]?  
recite.Caus.Past.DefObj.2Sg finally  
Móricz.Abl  
the three cow.Del  
the childhood.Poss.1Pl.Ela known funny little poem.Acc  
the two little talkative Hódmezővásárhely.Adj niece.Poss.2Sg.Ins  
'Did you finally make your two little talkative nieces from Hódmezővásárhely  
recite the funny little poem, known from our childhood, from Móricz about the  
three cows?'



- b. Elmondattad végül
  - [a két kis cserfes hódmezővásárhelyi unokahúgoddal]
  - [a gyerekkorunkból ismert tréfás kis verset Móricztól a három dühös tehénről]?

The third approach in connection with NP-complement is that of the theory of Alberti&Medve (2002/2005:141–142, and Chapter 6), described also in Alberti&Farkas (2013).

(6) Following the Argument (Inheritance) Principle they assume that

- a. Lexical-semantic (and conceptual (Laczkó 2000)) arguments of heads appear in X' as sisters of X.
- b. They may remain *in situ* (under certain circumstances).

If we admit, in harmony with this latter approach, that the complement zone of the N is not necessarily empty since the dependents of the noun can remain after it, it is requisite to find a perfect constituency test. It is worth basing a constituency test on answers because the syntactic category of answers (and the fact that this syntactic category belongs to a constituent) can be predicted on the basis of the corresponding questions. Complete answers are more advantageous since short answers are to be construed as elliptical constructions with less transparent syntactic structure. Focus constructions, however, should be avoided, because the Hungarian focus construction does not tolerate right branching from the head. Our candidates are the non-exhaustive *For example...* answers which contain contrastive topics. The contrastive topic construction readily tolerates right branching, and can be completed with a resumptive pronoun, which signals the end of the tested nominal constituent. Example (7) shows how to use this test on a very complex DP: the phrase which begins after the *Na például* ‘well, for instance’ construction and ends in the pronoun *az* ‘that’ forms one constituent.

(7) *Na például* ‘Well for instance’ Test as a constituency test

Mi bosszant?

what annoy.3Sg

Na például [az előzetes egyeztetés nélküli **meghívása** a húgodnak  
arra az éjfélig tartó koncertre], az nagyon bosszant.

well for\_instance the previous agreement without.Adj invitation.Poss.3Sg

the sister.Poss.2Sg.Dat

that.Sub the midnight.Ter lasting concert.Sub that very annoy.3Sg

'What annoys you? Well for instance, as for your sister's invitation to that

concert lasting until midnight, without any previous agreement, *that* annoys me

very much.'

Our test answers a definite *yes* to the question whether also nominal heads have complements. However, many factors might influence the judgment on noun phrases with non-empty complements. Since the goal of this paper is to concentrate on DP-internal operators, for a more detailed analysis, see the manuscript based on our Piliscsaba talk (Alberti & Farkas 2013b) and poster (Farkas & Alberti & Szabó 2013).

## 2.2. Theories about DP-internal operators

Should noun heads have complements, that does not necessarily mean that their structure is similar to VPs and that they have operators. “The evidence presented in favor of a DP-internal topic or focus position in the literature involves several different lines of argumentation” (Szendrői 2010: 867). The most common explanations are based on examples of adjective reordering associated with contrastive focus (8).

(8) Adjective reordering

My friends all drive big cars, but only I drive a BLACK big car. (Truswell 2005, c.f. Szendrői 2010)

Nevertheless, the reordering is optional; the adjective might only be marked prosodically. Already this fact can lead to the conclusion that the focus operator used here in a syntactic sense does not involve movement at all. After analyzing further details, Szendrői (2010) establishes that both topic and focus movement are driven by a need to create a syntactically continuous comment or background constituent. She does not deny the existence of a DP-internal topic or a DP-internal

focus. She only denies the existence of movement of this particular constituent within its own DP since that would leave the comment (or background) discontinuous.

It is worth noting that the theories presented in Szendrői (2010) only deal with the position of non-argumental elements of nouns. In this paper the term *operator* is used in a semantic and not in a syntactic sense, and the object of description is the scopal interpretation of nominal *arguments* in inherent operators marked with *only*, *also* and *both*. Here the question arises: which nominal heads can take arguments at all.

### 2.3. Nouns with argument structure

Broekhuis & Keizer (2012, 117–356) base their theory on the fact that typically three types of nominal heads qualify as argument-taking ones: deverbals, *story/picture* nouns and relational nouns.

#### 2.3.1. Deverbals nouns

There are two derivational processes in Hungarian the result of which are deverbals nouns which inherit the arguments of the input verbs: nouns with the suffix *-Ó(ja)* denote ‘actor / instrument’, while suffix *-Ás* forms complex event nominals to denote an action or activity (Laczkó 2000).

The characteristics of the latter one are as follows:

- a) their event and argument structure is the same as that of the input verb,
- b) they cannot be pluralized,
- c) their oblique case-marked arguments or adjuncts can be adjectivized by *való* (Laczkó 2000).

Example (9) shows the complex event noun *meghívás* ‘invitation’ in a *való*-construction:

(9) A complex event noun in *való*-construction

Elleneztem mindkettőtök nyilvánosság előtt való meghívását.  
disagreed.1Sg both publicity before való  
invitation.Poss.3Sg.Acc  
'I was against inviting both of you in public.'

### 2.3.2. *Story/picture* nouns

Story and picture nouns can be either deverbal or non-derived and are claimed to take an Agent (creator) and a Theme (subject matter) as their arguments in addition to a frequently occurring dependent, the owner. The arguments of *picture* and *story* nouns can generally be left unexpressed (Broekhuis & Keizer 2012, chapter 2.2.5.) Example (10) illustrates a *story* and a *picture* noun in constructions containing a quantifier.

(10) *Story/picture* nouns

- a. Elfogadtam mindkettőtök cikkét  
accepted.1Sg both.Poss.2Pl paper.Poss.3Sg.Acc  
'I accepted the papers of both of you.'
- b. Láttam mindkettőtök képeit az esküvőről.  
saw.1Sg both.Poss.2Pl picture.Poss.3Sg.Pl.Acc the wedding.Del  
'I saw the pictures of both of you about the wedding.'

### 2.1.3. Relational nouns

Relational nouns are underived nouns which obligatorily take an argument referring to a related entity (Laczkó 2009). Some of these nouns can only be used in possessive constructions, and if the possessor is not realized, the noun phrase is not well-formed. Therefore, it is necessary to attribute at least a lexical conceptual structure to them. (11a-c) are examples for relational nouns with a quantified possessor.

(11) Relational nouns

- a. Megfogtam mindkettőtök kezét.  
caught.1Sg both.Poss.2Pl hand.Poss.3Sg.Acc  
'I took the hands of both of you.'

- b. Imádom            mindkettőtök            szüleit.  
                         admire.1Sg   both.Poss2Pl            parent.Poss.3Sg.Pl.Acc  
                         ‘I admire the parents of the both of you’
- c. Csokikrém            tesztek minden            süti közepébe.  
                         chocolate cream.Acc   put\_in.1Sg   every            cake middle.Poss.3Sg.Ila  
                         ‘I put chocolate cream inside every cake.’

### 3. Methods and Results

#### 3.1. The behavior of the quantified possessor beside different types of nominal heads

Laczkó (2009), citing Bresnan (2001), made a distinction between *argument structure* and *lexical conceptual structure*. The latter is a semantic level of representation encoding certain aspects of the meaning of predicates. This term is used here to denote structures the members of which have an intermediary status between argumenthood and adjuncthood. We argue that the nominal head may have a complement zone with arguments, adjuncts and members of the conceptual structure: conceptual arguments.

One of the dependents of the noun head is the possessor. Accepting the theory of Szabolcsi (Laczkó&Szabolcsi 1992), the Hungarian generative literature considers the possessor as a unique dependent of the noun head which takes the possessedness suffix. The relation between the possessor and the possession is similar to the relation between the subject and the predicate. Therefore, for us, it is a matter of course to base our test on the behavior of the possessor.

Table 1 summarizes the behavior of the possessor as a quantifier (Q “both”) in DP-internal position with a deverbal (12a), a *story/picture* (13a), and a relational (14a) noun head. We found that DP-internal quantifiers can take scope over the matrix verb (Table 1)—just like the extracted possessors. Meaning 2 stands for this wide-scope reading, and these constructions can be interpreted as DP-external, preverbal operators.

DEVERBAL	DP-INTERNAL	(12a) Ellenzem [ <sub>DP</sub> mindkettőtök(nek a) meghívását] disagree.1Sg both.Poss.2Pl(Dat the) invitation.Pos
	PREVERBAL Q (“ALL”)	(12a’) Mindkettőtöknek <sub>Q</sub> ellenzem [ <sub>DP</sub> a meghívását] both.Poss.2Pl.Dat disagree.1Sg the invitation.Pos
STORY/ PICTURE	DP-INTERNAL	(13a) Elfogadtam [ <sub>DP</sub> mindkettőtök(nek a) cikkét] accepted.1Sg both.Poss.2Pl.(Dat the) paper.Pos
	PREVERBAL Q (“ALL”)	(13a’) Mindkettőtöknek <sub>Q</sub> elfogadtam [ <sub>DP</sub> a cikkét] both.Poss.2Pl.Dat accepted.1Sg the paper.Pos

Table 1: Possessor as universal quantifier with wide scope interpretation

The sentence in (12a), however, is scopally ambiguous. It can take scope over the verb and mean: ‘In the case of the both of you, I was against the idea of invitation’. Nonetheless, the possessor can take the narrowest sentence scope, if it is given a special rising intonation contour typical of contrastive topic with the interpretation ‘I was against the idea of inviting you together; but one of you can be invited’ (12b).

Szabolcsi (2010) mentions that there is a cross-linguistic variation in the behavior of quantifiers like *both* and *mindkettő*. According to Landman (2004), the English *both* is strictly distributive, but the Dutch (*de*) *beide* allows collective interpretation. Hungarian *mindkettő* is ambiguous, but only under certain circumstances. In the case of the deverbial noun, *mindkettő* can have a collective meaning. In example (12b), accordingly, the possessor is in DP-external position with a DP-internal interpretation (Table 2).

DEVERBAL	DP-INTERNAL	(12a) Ellenzem [ <sub>DP</sub> mindkettőtök(nek a) meghívását] disagree.1Sg both.Poss.2Pl(Dat the) invitation.Pos
	CONTRASTIVE	(12b) Mindkettőtöknek <sub>C<sup>Topic</sup></sub> ellenzem [ <sub>DP</sub> a meghívását] both.Poss.2Pl.Dat disagree.1Sg the invitation.Pos

Table 2: Possessors of deverbial nouns with narrow scope interpretation

With a non-deverbal noun, narrow-scope reading is impossible: (13a') cannot mean 'I accepted the paper that was written by the both of you together'. (15b) is also ill-formed, and not for a phonological reason (15b'), although it represents the intended meaning.

(15) Is it possible to create scope for non-deverbal nouns?

- a. Elfogadtam a cikket, ami mindkettőtöké.  
accepted.1Sg the paper.Acc that both.Poss.2Pl.Posr<sup>52</sup>  
'I accepted the paper that was written by you together.'  
meaning<sub>2</sub>: ACCEPT > BOTH > PAPER
- b. \*Elfogadtam a mindkettőtök cikkét.  
accepted.1Sg the both.Poss.2Pl paper.Poss.3Sg.Acc  
intended meaning: 'I accepted the paper that was written by you together.'
- b'. Elfogadtam a mindkettőtök számára fontos cikket.  
accepted.1Sg the both.Poss.2Pl for important paper.Acc  
'I accepted the paper which is so important to both of you.'

Consequently, only a deverbal noun inherits a real argument structure which is capable of scopal interaction with the verb's argument structure, whilst a non-deverbal nominal has no argument structure, only conceptual arguments, because the narrow-scope reading is not available.

### 3.2. Arguments of deverbal nouns in DP-Internal and DP-External Operators

#### 3.2.1. Possessor argument

In the second part of the paper, the appearance of arguments of deverbal nouns is systematically inspected: as they appear as different operators in different positions. Arguments, especially the dative case-marked possessor, can be extracted from the DP and can stand in a preverbal position in focus and in quantifiers with a wide-scope interpretation (16b, 12a', 18b). The possessor with a

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<sup>52</sup> The suffix *-é* (Posr) is a special possessor suffix in Hungarian. It is attached to possessors and refers to implicit possessions. The expression *Péteré* 'Péter.Posr', for instance, can be translated as *Péter's one*.

contrastive intonation contour has an inverse scope reading (16a, 12b), except when it is modified by *also* (18a).

Within the DP, there are at least three fix positions for the possessor argument. The dative case-marked possessor occupies the domain before the D (see e.g. 16a), it can also occur post-nominally (e.g. 16e), or in the postverbal domain (e.g. 16f); while the unmarked one must stand in the zone between the definite article and the nominal head (16d).

(16) The possessor as a focus

a. <sup>?</sup>Csak a f iúnak<sub>CTOP</sub> ellenzem a meghívását. MEANING1: BE AGAINST > ONLY > INVITE

only the boy.Dat disagree.1Sg the invitation.Poss.3Sg.Acc  
'I'm against the idea of inviting only the boy.'

b. Csak a fiúnak ellenzem a meghívását. MEANING2: ONLY > BE AGAINST > INVITE  
only the boy.Dat disagree.1Sg the invitation.Poss.3Sg.Acc

'Only in the case of the boy, I'm against the idea of his invitation.'

c. Ellenzem [csak a fiúnak / Julinak a meghívását]. MEANING1: BE AGAINST > ONLY > INVITE

disagree.1Sg only the boy.Dat/ Juli.Dat the invitation.Poss.3Sg.Acc  
'I'm against the idea of inviting only the boy/only Juli.'

d. \*Ellenzem [a csak a fiú/Juli meghívását.]

disagree.1Sg the only the boy/ Juli invitation.Poss.3Sg.Acc

d'. Ellenzem [a csak a fiú számára érdekes könyv] elolvasását.

disagree.1Sg the only the boy for interesting book reading.Poss.3Sg.Acc  
'I'm against the idea of reading the book which is only interesting to the boy.'

e. \*Na például [<sub>DP</sub> a meghívását csak a fiúnak/ csak Julinak], azt ellenzem.

well for\_instance the invitation.Poss.3Sg.Acc only the boy.Dat/only Juli.Dat  
that.Acc disagree.1Sg

f. \*Ellenzem [ a meghívását] tegnap [csak a fiúnak/ csak Julinak].

disagree.1Sg the invitation.Poss.3Sg.Acc yesterday only the boy.Dat/only Juli.Dat

The focus receives a wide-scope reading in a preverbal position (16b). But of course it has a narrow-scope interpretation in contrastive topic and before the D



(16a and c). In (16d) the first definite article indicates that the focus particle *only* belongs to the possessor, and not to the whole DP. The ill-formedness is not triggered by a phonological rule, because (16d') is well-formed.

(17) The possessor with the quantifier *both*

a. Na például [DP a meghívását mindkét fiúnak], azt ellenzem.  
MEANING1

well\_for\_instance the invitation.Poss.3Sg.Acc both boy.Dat that.Acc disagree.1Sg  
'Well, for instance, I'm against the idea of inviting both boys together.'

b. Ellenzem [a meghívását] sajnos [ mindkét fiúnak]. MEANING2

disagree.1Sg the invitation.Poss.3Sg.Acc unfortunately both boy.Dat  
'Unfortunately, in the case of both of the boys, I'm against the idea of their invitation.'

The possessor as quantifier is scopally ambiguous in a DP-internal position. Nevertheless, if it stays after the nominal head, it takes narrow scope (17a). (For more examples see Table 1).

(18) The possessor with the quantifier *also*

a. \*A fiúnak is<sub>CTOP</sub> ellenzem a meghívását .

the boy.Dat also disagree.1Sg the invitation.Poss.3Sg.Acc

b. A fiúnak is ellenzem a meghívását. MEANING 2 ~ MEANING1

the boy.Dat also disagree.1Sg the invitation.Poss.3Sg.Acc  
'I'm against the idea of inviting the boy as well.'

c. Ellenzem a fiúnak is a meghívását. MEANING2 ~ MEANING1

disagree.1Sg the boy.Dat also the invitation.Poss.3Sg.Acc  
'I'm against the idea of inviting the boy as well.'

d. \*Ellenzem a fiú is meghívását.

disagree.1Sg the boyalso invitation.Poss.3Sg.Acc

e. \*Na például [DP a meghívását a fiúnak is] ellenzem.  
 well for\_instance the invitation.Poss.3Sg.Acc the boy.Dat also disagree.1Sg

f. Ellenzem [a meghívását] sajnos [a fiúnak is]. MEANING2  
 ~MEANING

disagree.1Sg the invitation.Poss.3Sg.Acc unfortunately the boy.Dat also  
 ‘Unfortunately, I’m against the idea of inviting the boy, as well.’

It is not clear if the quantifier *also* can take a narrow scope at all. We found that this operator cannot tolerate the position after the D; it can only occur extracted (18b), postverbally (18f), or within the DP before the D (18c). Table 3 summarizes our findings. Narrow scope interpretation is highlighted by a light grey background, while the dark grey cells indicate wide scope interpretation.

	CONTR. TOPIC	PRE- VERBAL	DP-INTERNAL POSITION:	
			BEFORE D	AFTER D
F (‘ONLY’)	? (16a)	✓ (16b)	✓ (16c)	* (16d)
O (‘ALL’)	(?) (12b)	✓ (12a’)	✓ (12a)	✓ (12a)

Table 3: The possessor argument in different positions

There are also differences in the interpretation of the possessor as an agent and as a patient, see Table 4. In (19a), if the possessor represents the patient, the quantifier is ambiguous with the following interpretations: ‘I refuse to treat the both of you together’ or ‘In the case of both of you, I refuse to treat you (one by one).’

On the contrary, (19b) can only be interpreted with a wide scope over the matrix predicate: ‘In the case of both of you, I refuse to be treated by you’. Therefore, our third conclusion is that the patient behaves as an argument while the agent behaves as a "conceptual argument".

<b>Interpretation of possessor as agent/patient</b>		<b>AGENT:</b> 'I refuse to be treated by the both of you at the same time.'	<b>PATIENT:</b> 'I refuse to treat the both of you at the same time.'
<b>DP-INTERNAL</b>	(19a) Elutasítom [ <sub>DP</sub> mindkettőtök kezelését]. refuse.1Sg both.Poss.2Pl treatment.Poss.3Sg.Acc	✓MEANING2: both > refuse > treat	✓MEANING2 ✓MEANING1
<b>PRE-VERBAL Q ("ALL")</b>	(19a') Mindkettőtöknek <sub>Q</sub> elutasítom [ <sub>DP</sub> a kezelését]. both.Poss.2Pl.Dat refuse.1Sg the treatment.Poss.3Sg.Acc	✓MEANING2: both > refuse > treat	✓MEANING2 both > refuse > treat
<b>PRE-VERBAL CONTR. TOPIC</b>	(19b) Mindkettőtöknek <sub>CTOP</sub> elutasítom [ <sub>DP</sub> a kezelését]. both.Poss.2Pl.Dat refuse.1Sg the treatment.Poss.3Sg.Acc	*MEANING2 *MEANING1	✓MEANING1 refuse > both > treat

Table 4: The interpretation of the possessor as agent/patient

### 3.2.2. Non-possessor argument

It was also examined what kind of scopal interpretation non-possessor arguments can have in *való*-constructions. Examples in (20) illustrate that the non-possessor argument *koncertre* 'concert.Sub' takes narrow scope in the *való*-construction if it is a focus or a quantifier *both* (20a,b), while the quantifier *also* cannot stand beside *való* (20c).

(20) Non-possessor arguments in *való*-constructions

a. Ellenzem a csak a koncertre való meghívását Julinak. MEANING1

disagree.1Sg the only the concert.Sub való invitation.Poss3Sg.Acc Juli.Dat.

'I'm against the idea of inviting Juli only to the concert.'

b. Ellenzem a mindkét koncertre való meghívását Julinak. MEANING1

disagree.1Sg the both concert.Sub való invitation.Poss3Sg.Acc Juli.Dat.

'I'm against the idea of inviting Juli to both of the the concerts.'

c. \*Ellenzem a koncertre is való meghívását Julinak.

disagree.1Sg the concert.Sub also való invitation.Poss3Sg.Acc Juli.Dat.

intended meaning: 'I'm against the idea of inviting Juli also to the concert.'

### 3.2.3. Two operators inside the DP

This subsection investigates the scopal interaction of several operators within the DP. Instead of trying out all the possible variants, the word order chosen is the one which can most preferably express the given scopal interpretation. In case of two operators, there are six different kinds of scopal relations. In examples (21a-j), the noun head is *meghívás* ‘invitation’ with its dative case-marked possessor argument *húgodnak* ‘of your sister’ and with the non-possessor argument *koncertre* ‘to the concert’. If the possessor is the quantifier *both*, the non-possessor argument is a focus (*csak* ‘only’), and the matrix verb is *ellenzem* ‘I disagree’, there are many word order variations assigned to the six possible scopal relations listed in Table 5.

If the construction is semantically difficult, it is not easy to give our judgment on the well-formedness of the construction. The structure of the constructions can be logically possible, but our perception hinders or prevents its understandability. Therefore, none of the sentences in (21) are perfect, but certain examples sound much better than others. It is very hard to understand the example (21j), since the focus stands in a contrastive topic, while (21i) is much better, because the syntactic position of the constituents maps the scopal relations.

According to our observations, the element with the intonation contour of a contrastive topic always gets its scopal meaning in the last position in the scopal hierarchy.

Scopal relations	Possible word order variations
Only > Both > Disagree	(21a) <sup>**</sup> Csak a koncertre ellenzem [ a meghívását mindkét húgodnak]. only the concert.Sub disagree.1Sg the invitation.Poss3Sg.Acc both sister.Poss2Sg.Dat
Only > Disagree > Both	(21b) <sup>??</sup> Csak a koncertre ellenzem [mindkét húgod(nak a) meghívását]. (21c) <sup>??</sup> [Mindkét húgodnak] <sub>CTop</sub> csak a koncertre ellenzem [a meghívását].
Both > Disagree > Only	(21d) <sup>?</sup> Mindkét húgodnak ellenzem [a csak a koncertre való meghívását]. (21e) <sup>??</sup> [Csak a koncertre] <sub>CTop</sub> mindkét húgodnak ellenzem [a meghívását].
Both > Only > Disagree	(21f) <sup>**</sup> Mindkét húgodnak csak a koncertre ellenzem [a meghívását].
Disagree > Only > Both	(21g) <sup>??</sup> Ellenzem [a csak a koncertre való meghívását mindkét húgodnak]. (21h) <sup>??</sup> [Mindkét húgodnak] <sub>CTop</sub> ellenzem [a csak a koncertre való meghívását].

Disagree > Both > Only	(21i) <sup>?</sup> Ellenzem [mindkét húgodnak a csak a koncertre való meghívását]. (21j) <sup>*?</sup> [Csak a koncertre] <sub>CTop</sub> ellenzem [mindkét húgod meghívását].
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Table 5: Preferred word orders belonging to scope orders

### 3.2.4. The structure of the DP

Up to this point in the paper, we have provided an underspecified structure for the Hungarian DP with four different positions domains within it: for the dative case-marked possessor, there is a domain before the definite article and one post-nominal position, and as for the unmarked possessor, there is the position after the D. Non-possessor arguments can stand after the N head, but they can also be used attributively in *való*-constructions before the N head.

However, there exists a phenomenon which has not been described by any models in connection with the structure of the DP. In (22) the non-possessor argument is not in a *való*-construction, and precedes the D head.

(22) The first position in the DP

Mi bosszant?

what annoy.3Sg

Na például a <sup>?</sup>[az éjfél<sup>ig</sup> tartó koncertre] az előzetes egyeztetés nélküli meghívásokat, az nagyon bosszant.

well for\_instance the midnight.Ter lasting concert.Sub the previous agreement without.Adj invitation.Poss.2Pl. that very annoy.3Sg

‘What annoys you? Well for instance, as for your invitation to that concert lasting until midnight, without any previous agreement, that annoys me very much.’

If we accept the grammaticality of this example, we need a new theory about the first position in the DP. Our hypothesis is that in certain cases a non-possessor argument can occupy this position before the dative case-marked possessor argument.

## 4. Conclusions

In this paper we presented three different concepts relating to the postnominal complement domain. We found some evidence for the existence of a potential

explicit complement zone belonging to an N head, and we introduced the *na például* ‘well for example’ test as a constituency test in Hungarian. This contrastive topic construction was the best candidate for the test, since it tolerates right branching, and can be completed with a pronoun which signals the end of a nominal constituent.

We tested three types of nouns with complements: relational nouns, *story/picture* nouns and deverbal nouns. We concluded that only deverbal nouns have real arguments; relational and *story/picture* nouns have conceptual arguments, since the arguments of deverbal nouns can also take narrow scope under certain circumstances. If the possessor argument stands in a contrastive topic position, or if it occupies a DP-internal position before the N head, the possessor with the quantifier *mindkettő* ‘both’ can have a collective meaning.

We examined the arguments of deverbal nouns in different positions. It was established that there are at least two possible strategies assigned to an argument:

- a) it can stay after its head to show its argumenthood,
- b) it can move to a preverbal operator position to fulfill its function.

As a result of our tests, the focused possessor receives a wide-scope reading in a preverbal position, while in a DP-internal (and in a contrastive topic) position it takes narrow scope. Focused possessors cannot stand postverbally and cannot stay unmarked.

The argument with the particle *also* prefer the preverbal and the postverbal positions, and it is not clear if it can take a narrow scope at all. The quantified argument can occur anywhere, and can be scopally ambiguous in DP-internal positions. Nevertheless, if it stays after the N head, narrow scope reading is only available.

Non-possessor arguments can also take narrow scope: in *való*-constructions with the focus particle *csak* ‘only’ or with the quantifier *mindkettő* ‘both’. However, our data show that the quantifier *is* ‘also’ cannot stand beside *való*.

We established that there are also differences in the interpretation of the possessor as an agent and as a patient: the agent behaves as a "conceptual argument" with a wide scope reading, while the patient behaves as a real argument, since it can have a narrow scope reading.

We confirmed that the inverse-scope reading is more accessible if there is a contrastive topic in the sentence, which always gets its scopal meaning in the last

position in the scopal hierarchy (independently of the number of the DP-internal operators).

We sketched out an underspecified structure for the DP, and mentioned a phenomenon that can modify our conception about the DP.

As neither this latter question, nor the behavior of DP-internal operators have been analyzed in the literature, more detailed analyses call for further research. The scopal interpretation of DP-internal operators can depend on many other factors we did not investigate here: for instance, on the matrix verb or on the input verb of the deverbal noun or on the heaviness of the N-complement (see Alberti & Farkas 2013b, Farkas & Alberti & Szabó 2013).

The reader is asked to feel free to explain data like these in any chosen framework. Our task here has been to review the behavior of DP-internal semantic operators according to an ultimately language-independent strategy.

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## ASPECTUAL ASYMMETRIES AND THE LACK OF TP IN SERBIAN

**Abstract:** This paper puts forward the idea that there is a two-way division between languages in terms of presence or absence of Tense Phrase – TP is projected only in languages with overt temporal morphology; languages without it lack TP. Such a two-partite division, I argue, can capture two seemingly unrelated phenomena: VP-ellipsis and aspectual distribution in so-called aspectual tenses, Aorist and Imperfectum. Regarding VP-ellipsis, I present data of VP-ellipsis under finiteness mismatches between the elided and the antecedent VP in Serbian and European Portuguese. I show that VP-ellipsis in such environments is available only in Serbian and argue that this is due to the absence of the TP-layer in Serbian: only no-TP languages allow finiteness mismatches. In TP-languages, such as European Portuguese, the lack of identity in the T-feature in such cases violates the feature-identity requirement for ellipsis. Regarding aspectual tenses, I compare Aorist and Imperfectum in Serbian and Bulgarian, showing that only in Serbian, these tenses are aspectually restricted. I argue that such a difference also stems from the presence or absence of TP: TP is present in Bulgarian, but absent in Serbian.

**Key words:** *Tense, Aspect, Serbian, VP-ellipsis, aspectual tenses.*

This paper illustrates availability of VP-ellipsis under finiteness mismatches, as well as certain asymmetries in distribution between imperfective and perfective aspect in Serbian. More specifically, it is shown that the two aspectual specification behave differently with respect to distribution in aspectual tenses, i.e. Aorist and Imperfectum, as well as in present and perfect participles. Regarding the aspectual tenses, Serbian is contrasted with Bulgarian, where no restrictions on aspect arise. Regarding VP-ellipsis, Serbian is contrasted with European Portuguese which, unlike Serbian, disallows finiteness mismatches. It is argued that seemingly unrelated phenomena and cross-linguistic differences follow from the parametric

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difference in the presence of TP-layer, i.e. the presence of TP in European Portuguese and Bulgarian, and its absence in Serbian. Moreover, it is shown that, in the potential absence of TP, temporal interpretations in Serbian can be alternatively derived with the help of aspectual and modal components.

### 1. VP-ellipsis and finiteness mismatches

Stjepanović (1997) argues that VP-ellipsis in Serbian is affected by finiteness, since non-finite targets can only be elided with non-finite antecedents.<sup>54</sup> Relevant non-finite VPs include past participles (which together with Auxiliary *be* derive past interpretations), and infinitival VPs (which together with modal *will* derive future interpretations).<sup>55</sup> As illustrated in (1), VP-ellipsis is possible even under “sloppy” identity between non-finite antecedents and targets, i.e. when the antecedent is participial and the target infinitival, as in (1a), and vice versa, as in (1b).<sup>56</sup>

- (1) a. Aca je već pobedio Anu, ali Iva nije ~~pobedio Anu~~/ neće pobediti ~~Anu~~.  
 Aca is already won Ana but Iva isn't (won-**pf.** Ana)/ won't (win-inf.**pf.** Ana)  
 'Aca has already defeated Ana, but Iva hasn't (defeated Ana)/ won't (defeat Ana)'
- b. Aca će pobediti Anu, ali Iva nije ~~pobedio Anu~~/ neće pobediti ~~Anu~~.  
 Aca is win-inf.**pf.** Ana but Iva isn't (won- **pf.** Ana)/ won't (win-inf.**pf.** Ana)  
 'Aca will defeat Ana, but Iva hasn't (defeated Ana)/ won't (defeat Ana)'

However, if VP-ellipsis in Serbian is indeed sensitive to finiteness, then the data in (2) come as a surprise: even when the antecedent is a finite VP, ellipsis of non-finite VPs is allowed. In other words, finiteness mismatches do not preclude VP-ellipsis in Serbian.

<sup>54</sup> The ellipsis of finite VPs is beyond the scope of this paper.

<sup>55</sup> I use the term past participles here only to differentiate these forms from present and perfect participles discussed in Section 4. Although ‘past participles’ occur mostly with past interpretations, these forms can also combine with auxiliaries to receive future interpretations, as illustrated in Section 5. This makes the term ‘past participle’ not entirely correct.

<sup>56</sup> Words marked with strike-through indicate what has been elided, and the parenthesis indicate the interpretation the elided structure receives.

- (2) ?Ivan povremeno pobedi Mariju, a Petar je samo jedanput  
 Ivan occasionally wins-**pf.** Marija and Petar is only once  
~~pobedio Mariju/ će samo jedanput pobediti Mariju.~~  
 won-**pf.** Marija/ will only once win-inf.**pf.** Marija  
 ‘Ivan defeats Marija from time to time, while Petar has(defeated Ana)/ will (defeat  
 Marija) only once’

Consider now European Portuguese. Unlike Serbian, European Portuguese displays the restrictions on finiteness mismatches in ellipsis. EP is a Verb-raising language with rich verbal morphology, which in principle allows VP-ellipsis, as shown in (3). However, Cyrino & Matos (2005) observe that in European Portuguese, VP-ellipsis is subject to parallelism requirement between the antecedent and the target (but see Zocca 2003, and Nunes and Zocca 2009 for Brazilian Portuguese). In (4), a finite form of the main verb is antecedent for an infinitival form. As (4) shows, finiteness mismatches are not tolerated in European Portuguese.

- (3) O João já tinha lido este livro, mas a Maria não tinha ~~lido este livro.~~  
 the João already had read this book but the Maria not had read this book  
 ‘João had already read this book, but Maria hadn’t.’ (Nunes and Zocca 2009)
- (4) a. \*O João trabalha e a Ana também há-de ~~trabalhar.~~  
 the João works and the Ana also has-to work  
 ‘João works and Ana also has to work.’
- b. \*A Maria estudou muito, mas o João não vai ~~estudar muito.~~  
 the Maria studied very hard, but the João not goes study much  
 ‘Maria studied very hard, but João will not.’

It thus remains to be established why finiteness mismatches under VP-ellipsis are tolerated in Serbian, but not in European Portuguese.

## 2. The presence of TP

I propose that the impossibility of finiteness mismatches in European Portuguese can be accounted in the following way: assuming finite verbs raise to T in Portuguese (Nunes and Zocca 2009), entering into a feature checking relation with T, if there is no Tense (T) feature with non-finite forms, the feature identity requirement for ellipsis (Merchant 2008 *i.a.*) will not be satisfied. In other words,

assuming there is a T feature on finite forms, finiteness mismatches are not expected to be tolerated in VP-ellipsis.

On the other hand, the availability of finiteness mismatches under VP-ellipsis in Serbian can be explained by the lack of mismatches in terms of T feature. More specifically, I propose that there are no T features to start with, this being due to the lack of TP in the language. If TP were present, finiteness mismatches should be impossible, since there would be a T feature on the finite form and there would always be a featural mismatch; ellipsis would be predicted to be impossible. If TP, however, is not present, then there are no T features to cause the mismatch between finite and non-finite forms, explaining why (2) is acceptable in Serbian. Regarding the idea of the lack of TP, Bošković (2012) argues that Serbian and article-less languages more generally lack DP (for Serbian, see also Corver 1992, Zlatić 1997, Bošković 2008, to appear (a,b) *i.a.*), but that they also lack a number of properties standardly associated with the presence of TP (e.g. Sequence of Tense). Assuming DP is the counterpart of IP, and if there is a parallel between nominal and clausal domain, then, he suggests, a language that lacks DP would also lack TP. Here I propose that a novel argument for the lack of TP can be made on the basis of the lack of finiteness mismatches in VP-ellipsis.

### **3. Aspectual tenses and aspectual asymmetries**

A seemingly unrelated phenomenon, i.e. distribution of aspect in aspectual tenses in Serbian, seems to fit in with the hypothesis that TP is absent in Serbian. Note that, in addition to periphrastic tense, a most common form used to refer to past events (as in (5)), Serbian makes use of aspectual tenses, i.e. Aorist and Imperfectum. Aorist typically denotes punctual, completed events, and Imperfectum describes incompleting, long-lasting or repetitive events.<sup>57</sup> Although Imperfectum is archaic, Aorist is still used in non-neutral contexts. More specifically, Aorist has special, mostly expressive meanings and it is extensively used in vivid narration. Interestingly, these tenses in Serbian impose restrictions on aspectual values they can combine with: Imperfectum occurs only with imperfective aspect, as in (6a), whereas Aorist occurs only with perfective aspect, as in (6b). As shown in (5), no such restrictions arise with periphrastic past tense.

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<sup>57</sup> I here focus on predicates that receive episodic, non-stative, non-generic interpretation, termed ‘eventive predicates’ (Pesetsky 1995, Enç 1991, Bošković 1996, 1997, Martin 1996, 2001, Wurmbrand to appear, *i.a.*).

- (5) a. Jovan je radio domaći.  
 Jovan is done-*impf.* homework  
 'Jovan was doing his homework'  
 b. Jovan je uradio domaći.  
 Jovan is done-*pf.* homework  
 'Jovan finished his homework'
- (6) a. Oni pecijahu \*ispecijahu hleb.  
 they bake-*impf.IM*/ bake-*pf.IM* bread  
 'They used to bake bread'/\*'They used to finish baking bread'  
 b. Stiže/ \*stiza Jovan!  
 arrive-*pf.AOR* /\*arrive-*impf.AOR* Jovan  
 'Jovan arrived!'/\*'Jovan was arriving'

Aorist and Imperfectum are also used in Bulgarian, a DP/TP language (Bulgarian has articles). Interestingly, unlike Serbian, Bulgarian does not impose restrictions on aspect with either Aorist or Imperfectum. As illustrated in (7) for Aorist, and in (8) for Imperfectum, these aspectual tenses can occur with either aspectual specification. The difference seems to be only in the interpretation, i.e. whether the event is interpreted as completed or not with respect to a particular reference point/interval (*včera* 'yesterday' in (7), *vseki dan* in (8b), or certain time interval in the past in (8a)). Furthermore, interpretations that are otherwise allowed in Bulgarian imperfective Aorist (7b), are altogether excluded in Serbian (6b). The same contrast obtains for perfective Imperfectum ((8b) as opposed to (6a)).

- (7) a. Včera pročetoh edna kniga.  
 yesterday read-*pf.AOR.1sg* one book  
 'Yesterday I read a book (and finished it).'  
 b. Včera četoh edna kniga.  
 yesterday read-*impf.AOR.1.sg* one book  
 'Yesterday I was reading a book'
- (8) a. Čitjah kniga.  
 read-*impf.IM.1.sg* book  
 'I was reading a book/I used to read a book'  
 b. Vseki dan, pročitah edna kniga.  
 every day read-*pf.IM.1.sg* one book  
 'I used to read a whole book every day'

I propose that the above discrepancies between Serbian and Bulgarian are due to parametric differences in terms of a presence of TP, i.e. presence of TP in Bulgarian, and the lack there of in Serbian. Again, assuming structural parallelism between nominal and clausal level, Bulgarian, an article language, would, unlike Serbian, have a TP projection. This difference, I propose, fits in with the restrictions that arise with aspectual tenses in Serbian, as opposed to Bulgarian.

Note again that Bulgarian examples in (7) and (8) suggest that Aorist and Imperfectum locate the event in the past while the aspectual information, i.e. information about the completion of the event, is determined by the imperfective and perfective aspect, respectively. If it is indeed the case that temporal component is contributed by Aorist and Imperfectum in Bulgarian, and if the temporal component of these tenses is computed in TP, while the aspectual component is computed in AspP, then nothing in principle should prevent a possibility of combining the aspectual tenses with either aspectual specification in Bulgarian.<sup>58,59</sup>

Regarding Serbian, Aorist and Imperfectum are not only denoting past event, but are rather emphasizing whether the event is completed or not. More specifically, Aorist is restricted to punctual, completed events, and Imperfectum to ongoing, incompleting events. I propose that in the absence of TP in Serbian, Aorist and Imperfectum became aspectualized, in a sense that the emphasis was placed on the aspectual meaning, i.e. on information about completeness of the event. If Aorist and Imperfectum have become specialized for denoting specific aspectual meaning, it would explain why they would only surface with perfective and imperfective verbs, respectively. Namely, given that Aorist always denotes punctual, completed events, I suggest that it can only be expressed with bounded viewpoint aspect, as defined in (9); according to (9), boundedness is characterized by the event time being included within a particular time interval. Conversely, unboundedness in (10) refers to a particular time interval being included in the event time. I further suggest that viewpoint aspectual specification in (9) is associated with perfective verbs in Serbian, since they always denote bounded events, and viewpoint aspectual value in (10) is associated with imperfective verbs, which denote

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<sup>58</sup> I am here simplifying the aspectual composition grossly by focusing on aspect in Bulgarian only as a part of AspP. I believe the situation to be more complex, given that Bulgarian, like Serbian, has rich aspectual morphology, with verbs being specified for aspect already in the verbal root. Generally, there is a distinction between outer, grammatical, viewpoint aspect, located in the AspP, and inner, situation aspect or Aktionsart, computed within the VP. Full aspectual information, I believe, is contributed by both grammatical and situation aspect.

<sup>59</sup> Bulgarian has a rich repertoire of tenses; Aorist and Imperfectum are not the only ways to obtain past interpretations. Other meaning contributions of the aspectual tenses, i.e. meanings that differentiate them from other past forms, are beyond the scope of this paper.

unbounded events.<sup>60</sup> Given the meaning of Aorist and Imperfectum, they are expected to be expressed with either perfective (in the case of Aorist) or imperfective (in the case of Imperfectum), but not with both.

(9) Perfective:  $\lambda P_{\langle t, \langle i, t \rangle \rangle} \lambda t_i. \exists e_1 (\text{time}(e) \subseteq t \& P(e)=1)$   
(Kratzer 1998)

(10) Imperfective:  $\lambda P_{\langle t, \langle i, t \rangle \rangle} \lambda t_i. \exists e_1 (t \subseteq \text{time}(e) \& P(e)=1)$

Note that, even though the distribution of aspects in the aspectual tenses can be accounted for, the question remains: how is temporal interpretation of Aorist and Imperfectum obtained in the absence of TP? I argue that the absence of TP should not pose a problem for temporal interpretations. Rather, I propose that in an aspectually rich language such as Serbian, temporal interpretations can alternatively be derived from aspectual and modal components (see Paunović 2001 for Serbian; cf. Lin 2003, 2005 and Smith and Erbaugh 2005 on temporal interpretations of Chinese and Kang 2012 on Korean).

Consider first Aorist. Assuming compositional structural analysis (see also von Stechow 2002, Klein 1994, Pancheva 2003, 2013, Pancheva and von Stechow 2004, *i.a.*), I suggest that Aorist can structurally be represented as a two-tiered aspectual system (Smith 1991, Pancheva 2003). One level is viewpoint aspect (which I argue in the case of Aorist is bounded), and the other is one Perfect. Perfect is an aspectual component that introduces a time span that generalizes over time intervals and extends backwards from the contextually salient reference time interval (RTI) (as given in (11) (Pancheva 2003, 2013)). Given that Perfect can in

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<sup>60</sup> The situation is somewhat more complex, since imperfective verbs in Serbian can denote bounded events under the interpretation known as *konstatacija fakta* ('statements of fact' (Brecht 1985); also observed in Russian (see Altshuler 2012 and references therein)). In (i), imperfective verbs in (b) and (c) denote events that are completed prior to the event in (a). Imperfective verbs here denote bounded events; if they were to be interpreted as unbounded, they would not necessarily be completed at the point when (a) is interpreted, contrary to the fact. The discussion of these interpretations is beyond the scope of this paper; it would, however, be interesting to see how these interpretations pattern with aspectual restrictions on Aorist and Imperfectum in Serbian.

- i. a. Pre nedelju dana, Marija je poljubila Jovana.  
before week days Marija is kissed-**pf.** Jovan  
'A week ago, Maria kissed Jovan'
- b. Nedelju dana pre toga davao joj je cveće.  
week days before that gave-**impf.** her is flowers  
'A week before that he had given her flowers'
- c. I zvao je u bioskop.  
and invited-**impf.** her in movie-theatre  
'and had invited her to the movie theatre.'

principle extend backwards from any given reference point, it is considered a sort of relative tense. Furthermore, I suggest that Perfect is parametrized in Serbian, as in (12) (à la Pancheva&von Stechow 2004), so that a time interval introduced by Perfect does not include the final point of the RTI; the RTI is the Utterance Time (henceforth the UT) unless contextually specified otherwise.<sup>61</sup> When all components are put together, Aorist can be represented as in (13). Moreover, I suggest that, in the absence of TP, (13) can refer to either Aorist or periphrastic past with perfective verbs (illustrated in (5b)). However, since, in neutral context only periphrastic forms are used, Aorist might be introducing an additional component responsible for its expressive flavor.

Regarding Imperfectum, it is possible to analyze it in the same manner, i.e. in a two-tiered aspectual system, with the only difference being the unbounded aspectual value of viewpoint aspect, as in (14). Furthermore, the same structural components involved in the computation of Imperfectum might also be involved in the computation of periphrastic past with imperfective verbs.<sup>62</sup>

(11)  $[[\text{PERFECT}]] = \lambda p \lambda t \exists t' [ [ \text{PTS}(t', t) \ \& \ p(t') ] \quad \text{PTS}(t', t) \text{ iff } i \text{ is a final subinterval of } t'$

(12)  $[[\text{PERFECT}]] = \lambda P. \lambda t. \exists t' [ t' < t \ \& \ P(t, t') ]$

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<sup>61</sup> Motivation for (12) are bounded past interpretations in Serbian which strictly precede the UT. Assuming periphrastic past forms have Perfect in their structure, and if the UT is the final interval for Perfect, then the event time that started at some point in the past would be predicted to allow for the UT as the final point of the event time, contrary to what is observed in (ii). On the other hand, if Perfect introduces a time interval that strictly precedes the UT, (ii) would be accounted for. However, the issue is far from settled. Consider for instance (iii), where the time interval introduced by adverbial is the final point of eating the cake. If Perfect is present in the structure and if it strictly precedes the RTI introduced by '5.05', the interpretation in (iii) cannot be obtained. Thus, there is a discrepancy between the RTI being the UT, and the RTI being a time interval introduced by an adverbial; only the latter, but not the former can be the final interval of the time span introduced by Perfect. The analysis of this problem is beyond the scope of this paper.

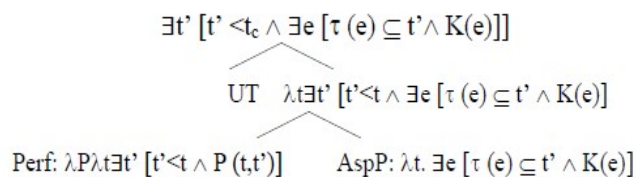
ii. Jovan je upravo pojeo kolač.  
 Jovan is just eaten-**pf.** cake.  
 'Jovan has eaten a cake (a moment ago)'  
 \*'Jovan has eaten a cake (just now)'

iii. Jovan je pojeo kolač u 5.05  
 Jovan is eaten-**pf.** cake in 5.05  
 'Jovan has eaten the cake at 5.05'

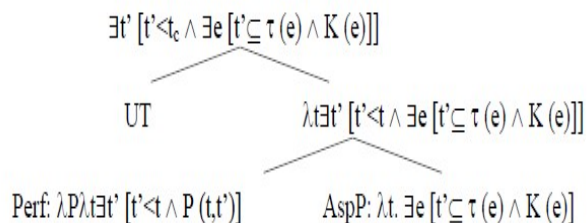
<sup>62</sup> Similar to the case of Aorist and perfective periphrastic past, the question remains what would tease apart Imperfectum and imperfective periphrastic past, and if this difference is structurally represented.



(13)



(14)



#### 4. Aspectual restrictions on participles

Participles in Serbian display an additional asymmetry with respect to the distribution of aspects. More specifically, present participles occur only with imperfective aspect, as illustrated in (15a), whereas perfect participles occur only with perfective aspect (15b). I propose that these restrictions follow from the usage of participles: present participles denote a frame for the event in the main clause, and are co-occurring with it, whereas perfect participles denote an event that necessarily precedes the event in the main clause. If imperfective verbs denote unboundedness, and perfective boundedness, then present participles are expected to occur only with imperfectives, and perfect participles only with perfectives.

(15) a. Pišući \*napišući pismo, uflekao je majicu.  
 write-*impf.pres.part*/*\*pf.pres.part* letter stained is T-shirt  
 'While writing a letter, he made a stain on his shirt'

b. Nabravši \*Bravši lale, prošetala je.  
 picked-*pf.perf.part*/*\*impf.perf.part* tulips walked is  
 'Having picked tulips, she went for a walk'

Regarding the temporal analysis, I propose that participles can be analyzed in the same manner as Aorist, Imperfectum and past periphrastic forms, i.e. participles

can also make use of the two-tiered aspectual system. The difference with participles would be that Perfect would locate the event in the past relative to the RTI imposed by the main clause, and not relative to the UT. Regarding AspP, its value would be unbounded for present participles and bounded for perfect participles.<sup>63</sup>

## 5. Temporal interpretation in the absence of TP

### 5.1 The UT interpretations

In Serbian, morphological present tense that receives an UT interpretation is incompatible with perfective aspect (16a), while being compatible with imperfective aspect (16b) (Todorović 2013).

- (16) a. \*Milan            pojede                    jabuku.  
         Milan            eats-**pfv.**                    apple  
         ‘Milan has eaten an apple (just now)’
- b. Milan            jede                                jabuku.  
         Milan eats-**impfv.**                    apple  
         ‘Milan is eating an apple right now’

Todorović (2013) proposes that the above incompatibility arises due to the conflicting requirements of Aspect and the local evaluation time, i.e. a time interval with respect to which the event needs to be located in the sentence. Assuming that perfective aspect requires inclusion of the event time interval within the local evaluation time (cf. Klein 1994, Kratzer 1998, von Stechow 1999, Wurmbrand to appear *inter alia*), and assuming that the UT is a near-instantaneous interval (cf. Giorgi & Pianesi 1997, Cowper 1996, 1998, Ogihara 2007 *inter alia*), the event denoted by the perfective aspect cannot be located within the short local evaluation time imposed by the UT; the form is correctly predicted to be infelicitous.<sup>64</sup>

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<sup>63</sup> I leave aside the issue of what might be projected above two aspectual projections with participles.

<sup>64</sup> Note that morphological present tense is compatible with perfective aspect when it receives habitual interpretation, i.e. when it is included in a longer stretch of time (as in (iv)), thus providing further support for the claim that the incompatibility arises due to the length of interval in which the perfective needs to be included.

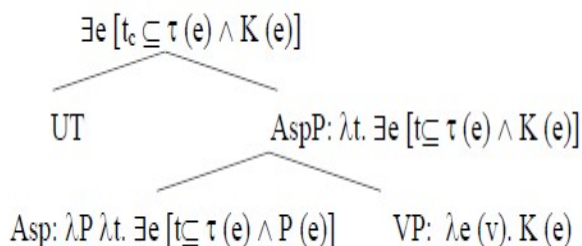
- iv. Milan            svakog dana    pojede                    jabuku.  
         Milan            every day        eats-**pfv.**                    apple  
         ‘Every day, Milan eats an apple’

The UT interpretations in Serbian are, however, compatible with imperfective aspect. As already mentioned above, imperfective VPs in Serbian most typically denote ongoingness, non-completion, with respect to the local evaluation time. In (17), the event of eating an apple is ongoing with respect to the UT, in (18a) with respect to a certain point in past, and in (18b) with respect to a certain point in future. Given the interpretation of ongoingness, they are associated with unbounded viewpoint aspectual specification (cf (10)).<sup>65</sup>

- (17) Milan                 jede                 jabuku.  
 Milan                 eats-**impfv.**                 apple  
 ‘Milan is eating an apple right now’
- (18) a. Milan je jeo jabuku.  
 Milan is eaten- **impfv.** apple  
 ‘Milan was eating an apple’
- b. Milan će jesti jabuku.  
 Milan will eat-inf. **impfv.** apple  
 ‘Milan will be eating an apple’

Regarding the UT interpretations, I suggest that, in the absence of TP, Asp with unbounded value can directly combine with the UT:

(19)



## 5.2. Future interpretations

Forms that receive future interpretations and that occur with perfective VPs refer to events that will have been completed prior to some point in the future:

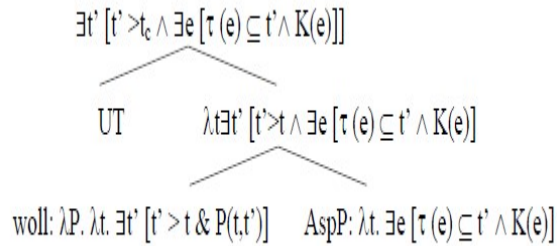
<sup>65</sup> However, cf. fn. 60 for bounded interpretations of imperfectives.

- (20) Milan će pojesti jabuku.  
 Milan will eat-inf.**pfv.** apple  
 ‘Milan will have finished an apple’

Regarding the computation of these forms, I propose that they comprise a *woll* component which introduces a time interval following the contextually salient reference time interval, as in (21). The relevant structural representation is given in (22):

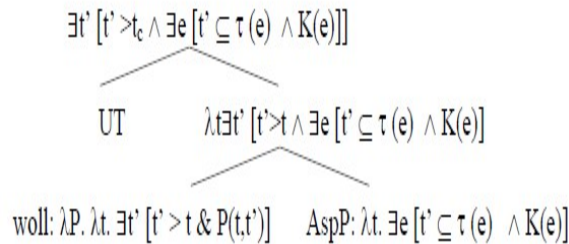
- (21)  $\llbracket \text{woll}_1 \rrbracket = \lambda P. \lambda t. \exists t' [t' > t \ \& \ P(t, t')]$  (along the lines of von Stechow 2009)

- (22)



Regarding future imperfectives, which denote an ongoing event in the future (cf. (18b)), they can be analyzed in a similar manner as future perfectives, with the only difference being the value of viewpoint aspect, i.e. unbounded value:

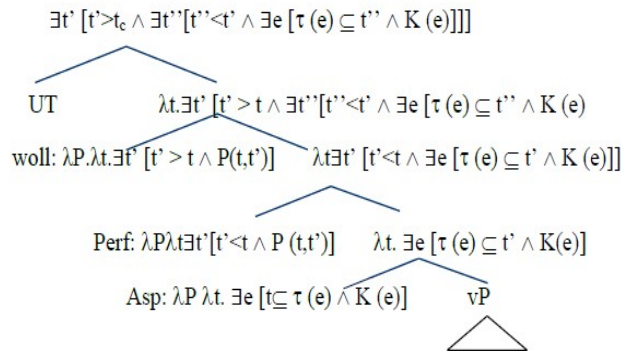
- (23)



Note that there is another possibility for the computation of future forms, at least for the computation of future perfectives. I propose that there might be an additional Perfect component, located between *wollP* and viewpoint *AspP*, as in (24). Motivation for this is the completion of future perfective events by a certain

point in the future. By having Perfect built into the structure, the event time can be included within a time stretch introduced by Perfect, i.e. be bounded, and it can still precede a certain time point in the future.<sup>66</sup> The immediate question arises: can Perfect be morphologically motivated in these structures? I suggest that some dialects of Croatian can motivate it. Unlike in Serbian, where the past participle is morphologically only visible in embedded temporal and conditional clauses, as in (25), in some dialects of Croatian, the past participle form of the verb is also felicitous in matrix clauses receiving a future interpretation, as in (26), potentially providing further support for the presence of the Perfect component in future contexts.

(24)



- (25) Kada/ako budem došla, reći ću ti.  
 When/ if be-1.sg.pres come-past.part. say-inf. will you-cl.acc  
 ‘When/ If I have arrived, I will tell you.’
- (26) -Budeš došla sutra? -Budem.  
 be-2.sg.pres come-past.part. tomorrow? be-1.sg.pres  
 ‘Will you come tomorrow?’ ‘I will.’

## 6. Conclusion

In this paper, I argued that the potential absence of TP in Serbian can account for the availability of VP-ellipsis under finiteness mismatches between the antecedent and the target. More specifically, if the lack of TP implies the lack of T feature, then the featural mismatch between finite and non-finite forms is not expected to

<sup>66</sup> Or overlap with it, in which case there is again the discrepancy between the RTI being some point in the future, and the RTI being the UT (cf. fn. 8)).

arise, since there are no T features on either form. I also showed that European Portuguese, a TP language, disallows finiteness mismatches under VP-ellipsis, which is expected if finite, but not non-finite forms are specified for this feature.

Moreover, I argued that the lack of TP in Serbian fares well with aspectual restrictions that arise with the aspectual tenses, i.e. Aorist and Imperfectum. If, due to the lack of TP, these tenses became aspectualized, gaining specific aspectual meaning, then they are expected to be restrictive in terms of the aspectual value they can combine with. On the other hand, the aspectual tenses in Bulgarian, a TP language, which seem to be more temporal in nature, can in principle freely combine with either aspectual value.

It was further shown that aspectual restrictions arise with present and perfect participles in Serbian, and I argued that those restrictions follow from the usage of these participles.

Finally, I addressed the question of temporal interpretation in the potential absence of TP, and argued that the event can alternatively be temporally located with the help of aspectual and modal components.

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## **‘DONE GONE’: ON EXPRESSIVITY IN THE PERFECT IN AFRICAN AMERICAN ENGLISH**

**Abstract:** This paper aims to connect two strands of research at the syntax-semantics interface in the landscape of African American English perfect constructions: (i) the domain of auxiliary-like elements in the tempo-aspectual domain (cf. Labov 1998, Green 1998, Terry 2006) and (ii) expressivity as a layer independently added to the truth-conditional component of meaning (Potts 2005, 2007). We identify so-called ‘done-gone’ constructions in African American English and propose that while they temporally convey a perfect, they importantly carry an expressive component beyond the narrow truth-conditional semantic layer.

**Key words:** *perfect, tense, aspect, expressive meaning, African American English.*

### **1. Introduction and background<sup>68</sup>**

The aim of the present paper is to begin to connect two strands of research at the syntax-semantics interface by examining what we take to be an under-investigated perfect construction in African American English (AAE). The two strands are (i) the domain of auxiliary-like elements in the tempo-aspectual domain, on which a rich literature exists (cf. Labov 1998, Green 1998, Terry 2006 for recent investigations on AAE, to name a few) and (ii) expressivity as a layer independently added to the truth-conditional component of meaning, an area which has also seen a good deal of serious exploration in recent years (e.g. notably via Potts 2005, 2007). The particular form we will set our investigative focus on is the *done gone* construction of AAE, exemplified in (1).

(1) *He done gone ate all the food.*

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A first paraphrase is given in (2) – via a perfect construction of Standard English, even though the immediate issue with this is that the paraphrase only partially captures what (1) conveys, as we will describe in some detail.

(2) *He has eaten all the food.*

We will see that there are indeed multiple ways of phrasing a perfect-like construction in AAE, a variety of English with a notoriously rich array of means to express temporal and aspectual notions. Moreover, we will propose that the *done gone* version in particular has an expressive component attached to it. In the process, we will also discuss some points pertaining to the (sole) *done* perfect of AAE (compare Labov 1998, Edwards 1991, Green 1998, Terry 2006 for recent discussions).

On the theoretical side, we wish to make an equally simple (but we believe also important) observation. If expressivity is indeed to be viewed as an additional layer compared to the tier of regular semantic meaning, as it has recently been suggested (cf. Potts 2007, Gutzmann 2013, among many others for recent discussions), then we should expect it to be able to show effects at more or less all levels of the interpretable structure. A quick comparison with focus may drive the point home and illustrate one of the difficulties with it. It is customary to associate focal properties semantically with alternatives (Rooth 1985). And it is known that alternatives can arise on virtually any node in an interpretable structure. But there are differences between the two areas. Focus alternatives can be signaled e.g. via pitch accent added to one item or another in a derivation. Expressivity, however, is either already encoded in a particular terminal node from the very beginning of a derivation, or it is not going to be there at all. That is: just because expressivity frequently does not appear on a particular position at Logical Form (LF, i.e. the interpretable structure), it does not mean that it *couldn't* appear there in principle. Maybe the lexical items we have considered just happened not to have developed an expressive dimension on the node under consideration.

Empirically it has been observed that expressivity can show its effect on certain lexical items in the nominal domain (notoriously on epithet nouns such as *idiot*, attributive adjectives like *damn*, or e.g. honorifics) and also in the structurally high areas of the clause roughly associated with the C domain (e.g. clause-connectors, discourse particles etc.); see Potts (2005, 2007); Gutzmann (2013a, 2013b) for more examples. But in fact it should also be able to appear in the extended VP projection, i.e. the T/Asp area of the interpretable structure, something that to the

best of our knowledge has hardly been reported so far. We will argue that *done gone* constructions are a particular instantiation of expressivity on a perfect morpheme.

The structure of the paper is as follows. Section two will investigate perfect constructions by presenting a brief, general background, outlining some of the key properties that such constructions have in AAE. In particular, we will discuss perfect constructions in AAE. Section three will then lay out some of the characteristic cornerstones of expressivity, before section four will combine the two areas and explore the characteristics of expressivity regarding *done gone*. Finally, section five summarizes our findings and offers some further discussion.

## 2. Tense and aspect in African American English

### 2.1. The basic tense-aspect architecture background

Let us clarify first and foremost what we mean by the tempo-aspectual area of the clause. We assume, akin to many others in the literature on tense and aspect, that the perfect (in general and in particular of the type available in Standard Modern English) is neither exactly a tense nor exactly an aspect in the narrow sense. This does, however, not mean that it must remain an undefined or vague term. First, its syntactic position is the following:

- (3) [TP Tense [PerfP Perfect [AspP Aspect [VP ... *Predicate*... ]]]]

Second, the contribution of the perfect has also been defined semantically, but we need to introduce some minimal background knowledge to illustrate its role. We assume here, for simplicity, that tenses are similar to pronominal items, with the proviso that they function in the domain of times (rather than that of individuals Partee 1973, Kratzer 1998). They specifically come with certain restrictions that can be captured as presuppositions. For instance, a past tense presupposes the availability of a relevant time interval before utterance time (cf. the way a pronoun like *she* presupposes an individual that is female and usually distinct from the speaker or the addressee). In a type-driven interpretative modeling, this means in particular that tenses are of type <i>.

An aspectual head, whether perfective or imperfective, is of type <<v,t>,<i,t>> (cf. Bhatt and Pancheva 2005, Iatridou et al. 2001). The perfect head itself has an interpretive function as a mediator between the aspectual and the temporal layer;

and it is thus of type  $\langle\langle i,t \rangle, \langle i,t \rangle\rangle$ . An approximation for its meaning can be found in the extended now theory (McCoard 1978, Dowty 1979, von Stechow 1999). This type of architecture is summarized in 0 below.

- a. [TP Tense [<sub>Perfp</sub> Perfect [<sub>AspP</sub> Aspect [VP ... *Predicate*... ]]]]
- b. [<sub>TP</sub>  $\langle i \rangle$  [<sub>TP</sub>  $\langle\langle i,t \rangle, \langle i,t \rangle\rangle$  [<sub>TP</sub>  $\langle\langle v,t \rangle, \langle i,t \rangle\rangle$  [<sub>VP</sub> ... ]]]]
- c.  $\langle i \rangle$  stands for times, t for truth values, v for events (usual conventions for truth-conditional types hold; use-conditional types may add one more layer to this)

We will give the relevant diagnostics in the following sections. But to make our line of argumentation clear from the beginning, we take the mentioned *done* (*gone*) forms to be perfects, i.e. to occupy the head position ‘Perfect’ at LF (as far as truth-conditional meaning is concerned). It is known that several sub-types of perfect are attested (notoriously e.g. resultatives). However, it is not necessary for present purposes to engage in that discussion - different types of perfect are also attested for AAE *done* (cf. Dayton 1996, Green 1998, Terry 2004). We will add some material and support the view that the *done* construction is a type of present perfect. Moreover, we propose that the inseparable form *gone* in the *done gone* construction resides exactly on the same position, by adding precisely expressivity to the perfect.

## 2.2. Tense and aspect in African American English

AAE is known for a highly refined inventory of tense and aspect forms (e.g. Dayton 1996, Labov 1998, Green 1998 and the references cited there). The two basic tenses known from general English (present/past) are available (sometimes e.g. with a zero copula realization in the present; cf. the main clause in example (4) below), as are future forms (if one considers them tenses).

- (4) *He* \_ *too old to be behaving that way.*
- (5) *He* **had** *a ball in Paris.*
- (6) *She* **’ll** *holler back at you later.*

In addition, a form that has been characterized as a non-recent or remote past exists. It is built by using a stressed form of *be* (occasionally rendered as BIN in the literature, e.g. Green 1998).

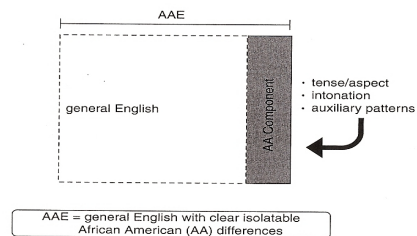
- (7) *She* **been** *had glasses.*  
She has been wearing glasses for a long time now.

Alongside such forms that primarily shift the temporal reference – i.e. in some way the relationship between utterance time and topic time, there is a range of forms that go beyond the domain of tense proper. We only offer a small selection here (beyond the aspectual perfect forms, which we will investigate in some detail). Expectedly, aspectual forms interact with modality and tense. Example (8) expresses genericity, while (9) can not only express past anteriority, but it can also render a sheer past-tense event (typically in a narrative context and often with subtle such functions); finally (10) not only has a prospective meaning but also clear connections to modality.

- (8) *He **be** at the gym on Monday.*  
He is usually at the gym on Mondays.
- (9) *What **had** happened was that the bus was late.*  
What happened was that the bus was late. (If it weren't for the bus' tardiness, I would have been on time.)
- (10) *They **fitna/sposeta/bouta** go to the store.*  
They are preparing/supposed to/ about to go to the store.

Perfect forms will be considered in detail below, beginning with the end of this section. While we are not listing them here specifically, general English forms such as the progressive are available too. A non-trivial more general question in this connection is: how do general English tense and aspect forms fit into the picture just sketched? Dealing with this situation as some form of bilingualism may not capture the properties of AAE quite properly. Both general English forms and more characteristic forms are part of the grammar AAE itself. Labov suggests the dual-component model of language for AAE (with the following pictorial representation based on Green 2011).

- (11) Dual component view of AAE (Labov 1998; Green's 2011:30 representation)



This seems to be a feasible, if perhaps superficial, way to think of the variety as far as the co-existence of two rich sets of inventories of forms is concerned. It correctly captures the rich possibilities available in AAE (and it holds for the tense and aspect markers in particular). But there may be limitations, e.g. in cases in which general English forms get distinct and/or additional readings. Closer to our focus of investigation, Terry (2006), for instance, suggests that the *-ed* form of the verb form itself (i.e. a regular ‘simple past’) is ambiguous between a perfect and a past perfective reading. There are, then, at least, three ways to build the perfect in AAE: one could use an *-ed* form, a general English perfect, or a *done* form.

(12) *What did you do today?*

(13) *What have you done today?*

(14) *What you done did today?*

We will investigate the *done* form more closely next. And we will also argue that there is a sub-variety of the *done* perfect (which, for all we know, has been rather neglected so far).

### **2.3. Perfect forms containing *done***

This section contrasts some of the basic morphosyntactic and semantic properties of *done* and *done gone* constructions in African American English, which we will argue both convey perfect meaning. Distinct nuances of meaning within the range of uses of the *done* form itself (i.e. independently of *done gone*) have been noted, and we will point out a few relevant such nuances below.<sup>69</sup> But it will not be so much the possible different nuances of the *done* form alone at the center of our discussion, but rather a contrastive discussion of forms such as (15) and (16) below. We will consider *done* in particular in comparison with the *done gone* form:

(15) *He done ate all the food.*  
He has eaten all the food.

(16) *He done gone ate all the food.*  
He has eaten all the food (and there is some attitude, e.g. of indignation of the speaker that the subject purposely ate all the food).

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<sup>69</sup> Somewhat similarly – in general terms – to what has been observed in the extensive literature with regard to different types of perfect in other languages and varieties (including general English), it is not unreasonable to assume that there are (at the very least descriptively) different types and uses of the *done* perfect in AAE, too (Dayton 1996, Labov 1998, Green 1998, Terry 2006).

The *done gone* variant states the fact of the subject having eaten all the food (in this respect, like the *done* version previously), but there is a judgment attached to it. We have given one possible example of the attitude above, but the judgment could either be good, bad, shocking, surprising, etc. Nonetheless, we will return to descriptions of more examples of expressive interpretations in section four.

For now, we will describe the grammatical ingredients of the *done* construction and contrast them with those of *done gone* in particular. (In the next two sections we will then investigate expressivity and its purported interaction with the two typical perfect constructions of AAE.) Let us begin our investigation of the grammatical properties by looking at the morphosyntactic selectional pattern of the *done* form and comparing it with the standard English *have* perfect first:

- (17)           a. *Lisa done sneezed.*  
                  b. *Lisa has (just) sneezed.*

We may note that *done* itself is – in simplest terms – an independent form selecting a verbal complement in turn. There is no indication synchronically for it to function here as e.g. a participle form of *do* (as one could be misled from the perspective of the standard English form *done*). We will leave the exact genesis of the *done* perfect aside, but see Labov (1998) and Edwards (1991) for some possibilities in a possibly rather unsettled issue. The synchronic parallelism of *done* with *have* in general English, on the other hand, has been noted several times in the literature (cf. e.g. Dayton 1996 for a vast review of literature and data as well as Terry 2006, though the form-meaning correspondence is not one-to-one in all uses, as we will see).

What *done* then selects is apparently an *-ed* form with regular verbs such as *sneeze* above. This selected form is indeed often underspecified morphologically. It could be, in principle, the participle (cf. the selection of the perfect in general English and other European languages), or the preterite. However, the form selected with irregular verbs is often the one that resembles the ‘preterite’ (cf. e.g. *ate* in (15) above), rather than a ‘participle’ in the traditional mapping of the forms. (We will use ‘preterite’ and ‘participle’ simply as shorthand to refer to the realization of forms as they are known from general English; we do not claim that they have the same status in AAE.)

There are, at the same time, exceptions in selectional properties. For example, *be* does not allow the preterite with *done* (therefore the corresponding perfect is *done been* and never *\*done was*) and there is also some variation. An example of

variation that is relevant for our investigation is as follows: when the lexical verb of motion *go* follows *done*, then it can have either the ‘preterite’ or the ‘participle’ form (cf. Terry 2004: 29):

- (18)        a. *John done gone to the store.*  
              b. *John done went to the store.*

Overall, then, the *done* form is constructed morphologically quite differently from general English perfect constructions. It consists of *done* itself and in most cases an added ‘preterite’ to build the perfect.

The major global requirements in the *done gone* form of AAE are quite similar. The main verb following *gone* has very similar selectional restrictions. It is typically an *-ed* form, often underspecified:

- (19)        *Lisa done gone sneezed.*

But the relevant form corresponds – in the ‘irregular’, i.e. specified and more telling cases – usually to the ‘preterite’ form of general English (cf. e.g. *done gone ate* in (16) above).

And again, also with *done gone*, *be* behaves differently (in not being selectable in the preterite):

- (20)        a. *John done gone been at the store.*  
              b. *\*John done gone was at the store.*

The *done gone* construction equally shares the main characteristic of the stress pattern with the *done* perfect. It is the lexical verb that is stressed in both types of perfects and *done* has no stress in either (This is not too surprising of course since they have some auxiliary status as tempo-aspectual markers, but it is different e.g. from the *done* form of Guyanese Creole; see Edwards 1991).

There are some local distinctions between the form *gone* as it appears within the *done gone* construction and the lexical verb *go* that could serve as the complement in the *done* perfect. Let us mention two here. First, the form we are investigating allows additional, actual main verbs to follow it in the preterite (*sneezed*, *ate* etc.); and second, unlike the main verb *go* that is placed into the *done* perfect, the *gone* form we are considering is not licensed in the ‘preterite’ (contrast this with (18) above):

- (21)        a. *You done gone ripped your pants.*  
              b. *\*You done went ripped your pants.*



The syntactic properties of *done* and *done gone* are also quite distinct from those of the perfect *have*. For instance, neither of the two AAE forms, given in (22)-(23) below can undergo subject-auxiliary inversion in any form (in conspicuous contrast with *have* in general English):

- (22) a. *Josh done cooked the pasta.*  
 b. *\*Done Josh cooked the pasta?*
- (23) a. *Josh done gone cooked the pasta.*  
 b. *\*Done Josh gone cooked the pasta?*  
 c. *\*Gone Josh done cooked the pasta?*  
 d. *\*Done gone Josh cooked the pasta?*

We give the different combinatorial forms for completeness. If the structurally highest item does not move, then the fact that the others do not move either would follow from the head-movement constraint (Travis 1984), under the assumption that what is involved are heads lined up along the extended projection of the VP.

*Done* perfect forms also seem to be immune to regular sentential negation, but here it would be wrong to blame this incompatibility on any syntactic rigidity. A possibly deeper reason seems to be in this case that *done* (and *done gone*) forms seem to be positive polarity items. We think this is correctly mentioned (in passing) for *done* in Dayton (1996). As is well-known in the meantime (if perhaps still not fully understood), polarity items do not like to be in the immediate scope of negation (cf. Szabolcsi 2004, but also Kroch 1974 for some early observations), but they may tolerate negative elements in other configurations. We note that this kind of discriminating behavior is visible to some extent with *done* and *done gone* perfects, too. Notice that the clausal boundary appears to resolve the problem of negation in (25) below.<sup>70</sup>

- (24) *\*Josh ain't done (gone) cooked the pasta.*  
 (25) *I don't think that she done (gone) took the train.*

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<sup>70</sup> There are many differences to be taken into account in the area of polarity items and things are no different here. We may e.g. also only note in passing the preposed negative *ain't* construction, which appears to be less degraded than regular negation (we leave an investigation of this fact to future research):

(i) *?Ain't nobody done (gone) cooked no pasta.*

*Done* forms then come with rather delimited options within the grammar of AAE. Why is such a form then nonetheless usually considered akin to a present perfect? Consider its **presentness**, which also does not show directly. But there is indeed a diagnostic - it becomes useful to consider tag questions in this connection. As e.g. Terry (2006) points out, the appropriate tag is *ain't* (a tag that is also available e.g. with the present progressive in AAE), but *didn't* tags are ungrammatical. This is similar for *done gone* forms too:

- (26) a. *Sheila done (gone) bought a car, ain't she?*  
b. *\*Sheila done (gone) bought a car, didn't she?*

An issue that has been discussed in connection with *done* is whether it is a **perfect** or a perfective. Green (1998) has argued that there are forms in which the event described is viewed as completed. The contribution of *done* should hence be viewed as that of a perfective head perhaps. Terry, on the other hand, has claimed that *done* constructions are counterparts of the perfect, e.g. on the basis of a survey of typological properties going back to Dahl (1985). It is also worth noting that a perfect does not exclude a perfective interpretation; so we will adopt this suggestion for current purposes.

Furthermore, an interesting point revolves around the present perfect puzzle (Klein 1992). The puzzle refers to the semantics of the present perfect in Standard Modern English in combination with a definite past tense temporal adverbial, as it poses a problem in the interpretation of the present perfect. Similarly, Terry (2006) finds the present perfect puzzle to be just as problematic in AAE. He focuses on the interaction of definite past-time denoting adverbials preverbal *done* sentences, as shown below.

- (27) a. *Josh done baked a caked.*  
b. *%Josh done baked a cake yesterday.*  
c. *Josh done baked a cake on a Friday.*

To some extent this seems to replicate the effects of the *have* perfect. Yet in particular, there is variation between speakers with regard to the acceptability of adverbs like *yesterday* (Terry notes such variation and there had been different results in previous studies). However, Terry observes that preposing past-tense adverbials yields unacceptable sentences in AAE with more categorical judgments. We concur with this:

- (28) a. \*Yesterday, Josh done baked a cake.  
b. \*On a Friday, Josh done baked a cake.

We will not go into what could produce the difference, but merely observe that the effects appear to be quite similar with *done gone* forms:<sup>71</sup>

- (29) a. Josh done gone baked a caked.  
b. %Josh done gone baked a cake yesterday.  
c. Josh done baked a cake on a Friday.
- (30) a. \*Yesterday, Josh done gone baked a cake.  
b. \*On a Friday, Josh done gone baked a cake.

To summarize this section: we have characterized the forms containing *done* (and *gone*) with regard to their descriptive properties as auxiliaries in the tense-aspect system of AAE. They are polarity-sensitive perfect forms. Some of the restrictions they show match those known from the literature on the perfect more generally (present perfect puzzle) and some – we believe – are still in need of investigation (e.g. the exact nature of the ban on topicalization). However, rather than exploring the vast area of the perfect in AAE here, we want to discuss something that we have barely touched upon and take to be relevant especially for the *done gone* perfect. That is, the expressive dimension.

### 3. Expressivity

The fact that there are words which do not make a truth-conditional contribution, but signal additional, so-called use-conditional components of meaning is not new. Instead it has begun to be seriously investigated with the tools of modern semantic theory rather recently (e.g. Potts 2005 and much subsequent work; cf. Gutzmann 2013a).

This is not the place to develop a primer on how other components of meaning differ from truth-conditional meaning (compare e.g. presuppositions, implicatures or focus semantics); however, there is perhaps one main generally claimed characteristic of expressivity that may give an idea. That is the fact that it

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<sup>71</sup> From the perspective of expressivity, topicalization – which may also be an expressive device (Gutzmann 2013a) – may have an effect interacting with the Kleinian topic time. But such a line of thought would not go very far for our current position (it would only have the potential of explaining the case of *done gone*, perhaps). In fairness, since we are not convinced that the (sole) *done* perfect is generally expressive as it is used in current AAE, we refer the interested reader to Terry (2004, 2006) on this form and we will have to leave the remaining issues for future research.

introduces a truly separate tier of meaning that stays independent in the computation from the interpretable structure (LF), which is required for the truth-conditional derivation of meaning. (For implicatures, presuppositions, and also focus-semantic values, there are well-known operators that show an interaction between structure and interpretation), though we should note that there is a debate (cf. Gutzmann 2013a). We mention three more specific diagnostics for expressivity next.

First, expressive items are claimed to be **independent**. A straightforward way to make sense of this requirement runs as follows. By taking out an expressive item, nothing should change in the truth-conditional composition of meaning.<sup>72</sup> For example, the sentence *That idiot George is famous* preserves its truth conditions if the expressive *idiot* is removed, i.e. the sentence will be true if and only if the individual in question is famous; but the removed item does of course contribute something on the expressive tier. Other sub-diagnostics with respect to independence have to do with the impossibility to negate just the expressive item (cf. the inappropriateness of the following as a response in dialogue to the sentence given: # *No, but he's famous*.)

Further diagnostics are **descriptive ineffability** (the impossibility or at least difficulty to give perfect paraphrases for an expressive item), **non-displaceability**, which is a diagnostic that ties an expressive item to the particular actual situation, and e.g. **repeatability** (e.g. using *damn* repeatedly increases the emotional load expressed – *Damn, I left my damn keys in the damn car*).

#### 4. *Done gone* and expressivity

We propose that the *done gone* perfect patterns as multidimensional with respect to major diagnostics of expressivity (cf. e.g.. Potts 2007 and the discussion in the previous section); we will illustrate the expressive nuances of meaning and a few additional contrastive points informally in what follows. (Most of the examples cross-classify and may in fact illustrate more than one relevant point).

##### 4.1. Independence of meanings and context-dependence

The meaning contributed by *gone* in the *done gone* perfect is independent. In all of the examples that we present in this paper (and all others that we have considered),

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<sup>72</sup> As pointed out by Gutzmann (2013a) his has limitations for certain items which can perform double duty and contribute something, independently, on each of the tiers, but it is a useful diagnostic in general.

the form *gone* can be removed without producing any change in terms of the truth-conditions layer of meaning. We assume that we are dealing with a perfect(ive) as described above and all of the structure-based properties are preserved. More specifically, the contribution of *done gone* examples divides into a descriptive and an expressive layer. We illustrate this in more examples below:

- (31) a. *John done took the train.*  
b. *John done gone took the train.*

The reading of (32a) can be perfective or perfect in nature as previously discussed. The event has been completed (its result may be relevant etc.) and, in turn, there is nothing more to report. However, the usage of *done gone* in (32b) contributes an additional layer to the sentence. For example, given the context that John has sworn to never take the train again the speaker might express surprise or shock that John rode the train. Perhaps particular intonational patterns could produce similar effects with regular perfects, but with *done gone* perfects, the emotional component is always there. The same pattern of usage is shown below.

- (32) a. *John done bought a new car.*  
b. *John done gone bought a new car.*

Given a context in which John has recently been laid off, an utterance like (32b) would express the speaker's disapproval.

*Done gone* is able to convey a variety of emotions. Its usage is indicative of a speaker's prior knowledge of a situation and conveys his or her attitudinal beliefs, either positive or negative, about the event.

- (33) a. *John done ran a mile in five minutes.*  
b. *John done gone ran a mile in five minutes.*

The accomplishment of running a mile in five minutes in (34a) does not appear to have any necessary emotional significance. However, the use of *done gone* in (34b) would signal that there is something more to the meaning of John running a mile in five minutes, even if it is unbeknownst to the hearer (no common ground or accommodation is required for the sentence to be felicitous). Given the point of reference that John has never been able to run a mile in five minutes up to now, the speaker would be expressing e.g. a congratulatory sense of astonishment about John's feat.

- (34) a. *John done swam in the Mediterranean.*  
b. *John done gone swam in the Mediterranean.*

As in (35b) above, perhaps the speaker has always wanted to swim in the Mediterranean and has just never been able to do it. As a result, the *done gone* perfect is able to capture his or her amazement, envy, and/or excitement about John's experience.

#### **4.2. Ineffability and the relationship to 'intensive' uses of *done***

As the attempted paraphrases above already illustrate, there is no ideal synonym for the expressive component of the *done gone* perfect. This is essentially the ineffability effect described in Potts (2007). What is clear, however, is that *done gone* associates not only with the event described, but also with the speaker and the utterance context. It can express a range of emotions from indignation and disapproval to congratulatory admiration and positive surprise that are hard if not impossible to describe in truth-conditional terms.

In the rest of this subsection, we want to note that there are predecessors in connection with *done* in the literature, even if *done gone* has been neglected (to our knowledge) and the connection has not yet directly been made to expressivity. Labov (1998), for example, refers to instances of *done* as the one found in (35) (originally from 1966) informally as 'intensive'.

- (35) After you knock the guy down, he done got the works, you know he gon' try to sneak you. [Member of the Jets, 13, South Harlem, 1966; cited after Labov 1998]

We take this line as an inspiring suggestion and close in spirit to the use-conditional meaning of recent approaches under the umbrella of expressivity. Overall, however, we cannot classify the Present-Day AAE *done*-perfect overall as an expressive. Arguably, the predicate *get the works* could be viewed as inherently "intensive." Nonetheless, in looking at the interaction of *done* perfects in more neutral predicates its focus on the event, opposed to the speaker's attitude or emotions, becomes more evident (see 'neutral' predicates such as *bake a cake* in (28) and *take the train* in (32), with which *done* can just contribute the perfect). That is, even though some case of *done* could perhaps go through as expressive (for different reasons), our impression is that in the case of *done gone*, expressivity is *necessarily* encoded.

To summarize the subsection, we encountered the issue of ineffability with *done gone* where we could find no examples without an expressive component.

Nonetheless, there are (sole) *done* examples in our investigation that appeared to be truth-conditional (cases of doubt arise when the predicate itself is expressive in some way; note that Labov also does not suggest that all cases of *done* are intensive). We follow what we take to be Labov's more general hint that a perfect could develop expressive uses, after which it could also be 'bleached.' While bleaching is problematic in formal terms (von Stechow 1995), we suggest that 'bleaching' in the case of *done* could be given content if it is viewed precisely as the loss of a possible earlier expressive component.<sup>73</sup>

### 4.3. Non-displaceability and perspective-dependence

The expressive part in a *done gone* construction says something about the utterance situation. For example, in a quantificational context such as (38) (modeled after an example in Potts), the *done gone* perfect does not only describe situations in which the joke is ruined co-varying with joke-telling situations. The indignation of the speaker necessarily also holds at utterance time, a property which does not hold for the mere *done* perfect in (39).

(38) *Whenever I've told a joke, she done gone ruined it.*

(39) *Whenever I've told a joke, she done ruined it.*

The infelicitous sequence in (40) below illustrates the same point of non-displaceability (in contrast to the fully felicitous sequence in (41) with mere *done* once more).

(40) *James believes she done gone laughed and ruined the joke. (?But I don't think there was any problem with that.)*

(41) *James believes she done laughed and ruined the joke. (But I don't think there was any problem with that.)*

Finally, we want to stress that more could be said about the expressive dimension with regard to *done gone*, but also that not the full battery of diagnostics is always applicable. For instance, repeatability is another possibility for expressives, as we have seen (cf. *damn*), but it is not straightforwardly implementable for the *done gone* construction; we argue that this follows from independent morphosyntactic combinatorial properties in the aspectual skeleton of AAE. That is, even though

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<sup>73</sup> A construction such as *done gone* could then be viewed as functionally useful to re-emphasize expressive content that is being lost with *done* alone, if historical data confirm this possible tendency. Predictions cannot be made with regard to the issue of actuation of change or even with regard to the spread of such potential changes, we believe.

perhaps striking sequences of tempo-aspectual auxiliaries are allowed in AAE, nothing like *done gone ... done gone* is felicitously licensed (from what we have seen so far). Negating *done gone* is not possible as such in general (that is, some of the possible negation tests would seem to produce a result), but in a fuller discussion it would have to be taken with a grain of salt, recalling that *done gone* like *done* is already a positive polarity item.

## 5. Summary and further discussion

Based on perfect constructions in African American English (AAE), our case study seems to confirm the prediction mentioned at the beginning. Expressivity is available in the T/Asp area, as well. We have illustrated this with one item that, to our knowledge, has been rather neglected within the rich research paradigm on the tense-aspect architecture of AAE. The two empirical lines of investigation we pursued include the better-known *done* perfect and especially the *done gone* construction. The main question we addressed was whether they support a multidimensional account in the sense of the recent literature. While it is not hard to find examples that may be expressive in some sense or another in the (sole) *done* construction, too (some *done* examples from the literature have in fact predicates that may cause some ‘intensive’ overall meaning), we found it impossible up to now to find examples with the *done gone* construction that were *not* expressive one way or another. Importantly, we believe even neutral predicates such as *take the train* are interpreted expressively with *done gone*. We therefore claim that the *done gone* construction is expressive. Subsequently, before closing the paper we want to discuss three further-going points.

First, there is a possible link to conjunction, which we do not want to exclude as being related to the *done gone* perfect (perhaps one way or another in terms of diachronic development; cf. below). But *done gone* in general is not exactly the same as a reduced conjunction, given that there are also some distinctions, the most important of which we take to be the behavior with respect to tags. Recall that *done gone* (like sole *done*) perfects take *ain’t* tags:

- (42) a. *Sheila done (gone) bought a car, ain’t she?*  
b. *\*Sheila done (gone) bought a car, didn’t she?*

This is systematically different in conjunctions:

- (43) a. *Sheila done gone and bought a car, didn’t she?*  
b. *\*Sheila done gone and bought a car, ain’t she?*



In connection with the same point (*done gone* vs. coordination), we may note that adverbs are well known to hardly intercalate in relevant sequences of auxiliaries. This is clearly preserved with *done gone*, but expectedly somewhat less strictly so with conjunctions:

- (44) a. <sup>?</sup>*She done gone and just took the first train.*  
b. <sup>\*</sup>*She done gone just took the first train.*

A partly related second point has to do with the fact that our paper is based on intuitions (of the second author) and informal inquiries with speakers from Ohio. It is observable already from the research on *done* constructions (cf. e.g. Dayton 1996, Green 1998, Terry 2004, 2006) that there is large variation with regard to the acceptability of certain perfect patterns and the variation need not be (only) regional, as Terry points out. We may expect this potential of variation to be no less prominent with *done gone*.<sup>74</sup>

And thirdly, a question is why expressives are not more frequently found on perfects. We are not sure, but note that the perfect around which this expressive has developed is perhaps built on particularly propitious ground. First (in this connection), the *done* perfect may have been an expressive at earlier stages itself. And second, note that *done* is exclusively a present perfect (it cannot be shifted back to a past perfect). And this kind of (non-shiftable) territory is exactly what expressives like. Conversely, the reason why expressives are perhaps not too frequently found in the T/Asp area may then be that that area in the interpretable tree is one that generally does a lot of shifting (i.e. it otherwise hardly ever stays with a focus on the present situation).

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<sup>74</sup> We thus leave, for the most part, e.g. geographical extension, other sources of variation, and possible diachronic developments to future research. The second author notes that his grandmother and grandfather used *done gone* sequences freely and that (impressionistically) more or less parallel expressive conjunctive constructions are currently frequently used. If there are speakers who should not have *done gone* sequences at all in their grammars, then it is possible that conjunctive strategies are the next of kin to convey similar expressive meanings; and in that case, they may thus substitute the original sequences in question. Conversely, we do not (want to) exclude that a conjunctive strategy may have been at the origin of *done gone*. On a speculative note, the final nasal that is pronounced in *gone* and the same sound that expresses conjunction (i.e. the corresponding 'n in the naturally occurring reduced form) may have not been particularly easy to pronounce (AAE not having true geminates), so that eliminating the superfluous sound may have helped the creation of the sequence. This could hypothetically apply to the genesis of more sequences (cf. also *done* itself), but it would of course need to be tested with diachronic data.

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## FOCUS-AFFECTED (UN)AVAILABILITY OF SCALAR IMPLICATURES

**Abstract:** This paper investigates the role of contrastive focus in the process of generating scalar implicatures (SIs) in the interpretation of sentences with the quantifier *neki* 'some' in Serbian. The role of focus has been neglected in the previous research, since most studies insisted on using 'neutral' stimuli in experiments on SIs. We hypothesize that the proportional reading of the quantifier, and the scalar implicature, should be facilitated if the proper scalar alternatives are evoked. One strategy to achieve this is to focalize the quantifier, given that focus is a device for evoking alternatives (Rooth 1985, Herburger 2000) – a mechanism characteristic of generating SIs as well (Barner & Bachrach 2010). In order to test this prediction we performed a series of experiments based on the Truth Value Judgment Task. Adult Serbian speakers (n=27) performed a visual version of the experiment, but we also present preliminary results from our work-in-progress with 7-year old (n=30) and 9-year old children (n=30) who conducted an audio version of experiments. The results suggest that focus does affect the availability of SIs, given that both adults and children tend to interpret the quantifier *neki* 'some' proportionally when it bears contrastive focus (although certain constraints such as partitivity affect the role of focus in adults).

**Key words:** *contrastive focus, experimental pragmatics, scalar implicatures, Serbian, quantifier neki 'some'.*

### 1. Introduction

Most empirical studies in the domain of scalar implicatures (henceforth SIs) were focused on the developmental perspective, showing that children are not as capable of generating SIs as adults are: adult participants derive SIs at a rate of more than 80%, while children remain at a chance level or lower (Barner, Brooks & Bale 2010, Gualmini et al. 2001, Papafragou & Musolino 2003, Noveck 2001, among others). However, recent findings indicate that in the contexts where the

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experimental paradigm is as neutral as possible and all the contextual factors are factored out, rates of scalar inferences are below 50%, on average, and never higher than 65% even in the adult speakers (Geurts 2010). These facts have also been attested in several studies dealing with Serbian quantifiers, which show that Serbian adult speakers often interpret the scalar term *neki* ‘some’ logically, not generating the implicatures (Katsos, Anđelković, Savić, Jošić 2009, Katsos et al. 2012, Mirić, Arsenijević 2013a, Mirić, Arsenijević 2013b). This additionally draws attention to the potential language variation and variation among adults.

Since the general pragmatic capacity should not be subject to language variation, our hypothesis is that aspects of syntax, semantics, prosody or information structure are responsible for the failure of adult Serbian speakers to derive SIs. Departing from here, we investigated different linguistic factors affecting the availability of SIs. This paper reports on the role of contrastive focus.

Focusing on the interpretation of utterances containing the scalar term *neki* ‘some’ in Serbian, this study is concerned with testing the hypothesis that contrastive focus plays an important role in making the scalar alternatives of quantifiers more available in the discourse, thus enabling the derivation of a scalar implicature.

The paper is structured as follows. In Section 1 we briefly describe what is known about scalar implicatures and contrastive focus, and review previous empirical studies. A brief description of the Serbian quantifier *neki* ‘some’ is also provided. In Section 2 we present the methodology used in the study – the Truth Value Judgment Task performed by Serbian native speakers. Results are presented in Section 3. First we present the results obtained from the population of adult speakers who performed a visual version of the experiment, and then the results of the audio experiments in progress obtained from 7- and 9-year old children. Both types of the experiments show that contrastive focus significantly affects the derivation of scalar implicatures in the given context. We discuss the implications of these results for theories of scalar implicatures and emphasize several methodological issues in Section 4. Finally, in Section 5 we conclude that different contextual cues available in the context make scalar implicatures more or less available to participants.

### **1.1. Scalar implicatures**

Let us first briefly review theoretical background of the notion of scalar implicatures. Consider the dialogue in (1).

- (1) A: Was the party good?  
B: Some (of the) people left early.  
→ Not all (of the) people left early.

B's utterance can have either a lower-bound, semantic interpretation of the quantifier *some* (at least one person left early) or an upper-bound, pragmatic interpretation (some, but not all of the people left early). This pragmatic enrichment from the semantic to the pragmatic interpretation has usually considered to be a scalar implicature. Scalar implicatures are not inherent part of the semantic meaning of words, i.e. the truth-conditional content carried by a sentence. SIs are pragmatic inferences which interlocutors derive based on the information from the context or background knowledge. SIs, as well as other conversational implicatures, arise on the assumption that discourse is a joint project undertaken by speakers who expect each other to be cooperative and follow the conversational maxims (Grice 1989). In that sense, B's utterance triggers another implicature, not scalar in its nature – that party was not good, given that some people left early.

In this paper we are dealing with scalar implicatures, which arise in virtue of speakers using a weaker scalar alternative from a contextually given informational scale (Horn 1972, 2006). In the case of *some*, the relevant scale includes other quantifiers <some, many, most, all>. It is the standard assumption that *some* and *all* stand in a special relationship such that one of them is uttered, the other is automatically activated as an alternative (Sauerland 2012). Scales are used to generate sets of alternative meanings, which are ordered according to their informativeness and are implicitly contrasted during interpretation. Informativeness is defined in terms of entailment: stronger scalemates (*all*) entail weaker ones (*some*), but the opposite doesn't hold. The assertion of a weaker term (*some*) conversationally implies the negation of the stronger ones (*not all*).

Computing a scalar implicature involves the following steps (see Barner & Bachrach 2010 for a more formal and detailed elaboration):

- 1) Computing a literal meaning of an utterance:  
*At least some people* left the party early.
- 2) Generating relevant alternative utterances:  
*All people* left the party early.

- 3) Inferring that a speaker was not in a position to utter the stronger alternatives (Grice's Maxim of Quantity)
- 4) Negating the stronger alternatives, i.e. deriving the scalar implicatures:

*Some, but not all* people left the party early.

With regard to the theoretical approaches dealing with the nature of scalar expressions, there is an ongoing debate between two equally influential accounts. Within the defaultist account, characteristic of certain neo-Gricean approaches (Levinson 2000, Chierchia 2004, Horn 2006), scalar implicature 'some, but not all' in the upper-bound interpretation of the quantifier *some* is the part of the meaning of the quantifier, it is generated automatically and by default. Within the contextualist view, scalar implicatures are generated only in contexts in which they are relevant and triggered by particular contextual factors (Geurts 2010, Breheny, Katsos & Williams 2006, Wilson and Sperber 1995). The main difference between the two accounts is the question whether the pragmatic, scalar reading is immediately available to speakers or needs to be strengthened in the context. Having this in mind, the quantifier *neki* 'some' in Serbian appears to be very interesting for research because of its specific property in this domain.

## **1.2. The word *neki* 'some' in Serbian**

The type of an utterance that we have used as stimuli in our experiments *Neke bojice su u pernici* 'Some (of the) crayons are in (the) pencil-case', can have either a cardinal (weak) reading – an undetermined number of crayons is in the pencil-case, or a proportional (strong) reading – given a set of crayons, some members of this set (and not others) are in the pencil-case (Milsark 1977). Cardinal interpretation gives rise to indefinite reading of *some* – at least some crayons are in the pencil-case, whereas proportional interpretation gives rise to a scalar implicature – some, but not all crayons are in the pencil-case.

Due to the lack of articles in Serbian, the interpretation of bare nouns is ambiguous. The word *neki* 'some' can precede a noun to serve a function of an indefinite article (both singular and plural nouns), and it can also cover the quantifier meaning (with plural nouns). The indefinite reading of *neki* 'some' is the dominant or default one, which makes the scalar interpretation the marked one. Therefore, it seems that Serbian speakers need to put more effort in deriving the scalar inference, given that they must go beyond the dominant default interpretation.



### 1.3. Previous studies of scalar implicatures

As noted in the Introduction, in order to point out pragmatic or cognitive limitations in children, most studies investigated SIs from a developmental point of view, using adult speakers only as control groups. However, there are studies which suggest both language variation as well as extralinguistically driven variation among adult population. A major study reports on lower percentage of implicatures in adult speakers of certain languages, Serbian being among them. According to the results of the COST Action A33 project (Katsos, Anđelković, Savić, Jošić 2009, Katsos et al. 2012), which investigated the acquisition of various quantifiers in 24 different languages, only 54% of Serbian adult speakers derived implicatures (in comparison to 99% of English speakers). This suggests that certain syntactic and semantic properties might be responsible for the low percentage of scalar inferences in Serbian and some other languages. One such property – partitivity – has already been shown to affect the rates of SIs in adult speakers of Serbian (Mirić, Arsenijević 2014). In addition, there are other, extralinguistic factors that influence the ability of adult speakers to derive SIs, such as speakers' educational background (Mirić, Arsenijević 2013b). Having all this in mind, scalar implicatures become even more promising research area from an interdisciplinary perspective, not just from the point of view of developmental psycholinguistics.

It is noteworthy that throughout the developmental studies various methodological problems can be observed, the use of the so-called 'neutral' stimuli being one of them. The experiments were usually based on the audio recorded utterances in which none of the words bares intonational (contrastive) focus, i.e. all words are produced 'as neutrally as possible'. This methodological choice seems rather impossible to achieve, unless sentences are read by the computer, as well as unnatural for interlocutors – focus is necessary in order to convey or perceive a meaningful message.

In our study we tested the prediction that focus might affect the scalar implicatures given that both the process of deriving SIs and the process of focalization involve the same mechanism of generating the alternatives and rejecting the ones which are not informative enough in the context. We hypothesize that the contrastive focus on the quantifier should make the scalar inference more available because it raises the relevance of a set of alternatives for the given quantifier. This hypothesis is in line with predictions already made in the literature, e.g. Geurts 2010 claims that contrastive focus could make SIs more available in the context. In addition,

previous empirical data dealing with focus conform to this assumption (Chevallier et al. 2008, Schwarz, Clifton & Frazier 2008, Zondervan 2010).

#### **1.4. Contrastive focus**

Different languages use various phonological and syntactic means to express focus (see Krifka 2008 for a more detailed elaboration on the focus types). This paper deals with the notion of contrastive focus. A focused expression is an expression which in a spoken language has an accentual peak or stress which is used to contrast or to compare the contrasted item either explicitly or implicitly with a set of alternatives (Hoeksema & Zwarts 1991). It represents an emphasized part of an utterance which indicates the presence of a set of alternatives relevant for the interpretation of the utterance (Rooth 1985, Hendriks 2004, Krifka 2008). It is expected that the alternatives which are not informative in the given context should be rejected.

Although the role of focus with regard to SIs is discussed earlier (Hirschberg 1985, Rooth 1992, von Stechow 1994), it has been only recently pointed out by Geurts (2010) that the focus should be tested as a means to evoke alternatives, which then triggers the SI. An important theoretical work that discusses the importance of focus for SIs derivation is presented in Hirschberg 1985: the author describes the marking of focus (by syntactic or intonational means) as ways to express *salience*, which is responsible for triggering the SI. Several papers discussed the effect of focus in the quantificational interpretation of scalar expressions such as *some* (Partee 1991, Herburger 1997). However, most of the studies concentrated on the effect of focus-sensitive particles such as *even*, *only* or *always* (Beaver & Clark 2003, Gotzner et al. 2013, Spalek, Gotzner & Wartenburger 2014) investigating the interpretation of nouns under the scope of a quantifier. Only few studies actually dealt with the focalization of the scalar expressions, mainly with the disjunction *or* (which forms a scale <and, or>) and we will only briefly summarize their main findings.

The study of Chevallier et al. (2008) tested the effect of focus in the process of SIs derivation in the interpretation of the utterances containing the disjunction *or* in English. Their study showed that the percentage of successfully derived SIs increased in comparison to neutral stimuli when the disjunction *or* was emphasized in a sentence (increased for 23% in a written form – when *or* was underlined and marked by capital letters, and for 50% in the spoken form in which participants heard the intonationally marked disjunction). The authors predicted this effect

from a relevance theoretic account, in which there is a pay-off between effort and effect. Focusing *or* motivates the hearer to make a bigger effort in interpreting the sentence. Therefore, the effect should also be bigger and it is more likely the hearer will go beyond the literal meaning of the sentence and enrich the meaning by deriving the SI.

Another study examined the effect of stress on *or* in English (Schwarz, Clifton & Frazier 2008), although from a different viewpoint. In their Experiment 1 the percentage of derived SIs was 84% when *or* was emphasized in the sentence, and 71% when another part of the sentence was accented (in their case – the auxiliary). In addition, the reaction time was significantly longer when the stress was on the auxiliary than on the disjunction. They claimed that emphasizing a scalar term increases SI-rates because it activates the scale. By activating the scale, the contrast between the term used and its alternatives is highlighted.

In a series of experiments, Zondervan (2010) investigated the effects of informational focus on scalar implicatures in the process of interpreting the disjunction *or* in Dutch. In his Experiment 3, stress on the spoken stimuli indicated which part of the sentence was informational focus. The percentage of derived SIs was 85% for the focused and 55% for the non-focused disjunction *or*, indicating the effect of focus.

All of the above mentioned studies focused on the interpretation of disjunction *or*, and to our knowledge, the role of contrastive focus in the interpretation of quantifiers has not been attested so far, although it deserves an equal attention.

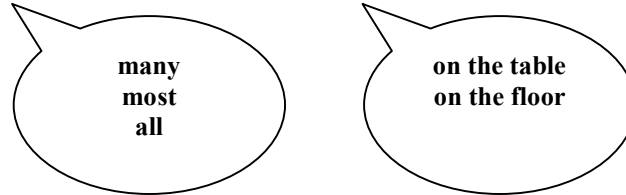
### 1.5. Hypothesis

Given that most of the previous studies in the domain of SIs based their findings on the ‘neutral’ stimuli, i.e. sentences in which none of the words was focalized, we assume that there is a vast area of implications that are not taken into account when discussing the process of deriving SIs.

We assume that the scalar implicature of the quantifier *neki* ‘some’ in Serbian fails due to the failure in evoking the relevant set of alternatives for the quantifier and establishing the proper reference domain restriction for the noun phrase. Following Schwarz, Clifton & Frazier (2008), we hypothesize that focusing a scalar item increases a listener or reader’s tendency to compute a scalar implicature, given that focus draws attention to the speaker’s use of a particular term on a scale and thus

activates the scale itself. In particular, the scalar implicature should be facilitated if the quantifier itself is contrastively focalized (stressed in a sentence). By focusing the quantifier the relevant set of scalar alternatives should be generated (*many*, *most*, *all*), whereas focusing another part of a sentence (such as the predicate) should trigger the alternatives for that part of a sentence, making the scalar alternatives less relevant in the given context (cf. example 2).

2) [**Some**]<sub>F</sub> of the crayons are [**in a pencil-case**]<sub>F</sub>.



## 2. Methods

### 2.1. Material and procedure

In order to test our prediction we used a variation of the Truth-value judgment task (TVJT). Participants were shown a set of visual stimuli (e.g. five crayons in a pencil-case), followed by a sentence containing the quantifier *neki* ‘some’ (e.g. *Neke bojice su u pernici*. ‘Some of the crayons are in a pencil-case’). They were asked to evaluate whether the utterance corresponds to a visually presented situation. In Experiment 1, the sentences were presented in a written form, on the screen, whereas in Experiment 2 participants were listening to prerecorded sentences.

The participants were introduced to a character named Pera. They were informed that he could not see well, so they would have to help him in the joined activity of looking at the pictures. The participants were told that Pera would state things about the pictures and that they were to say whether Pera gave appropriate comments about what he saw in the pictures. Preceding each picture, a sentence was introduced in order to provide an appropriate context (a larger set of crayons): *We brought 5 crayons to school*. The main question for the participants was: *Did Pera see it well?* and they were asked to click on a ‘yes’ or ‘no’ button shown on the screen (Experiment 1) or to answer ‘yes’ or ‘no’ (Experiment 2). In the audio

version of the experiment, if the answer was ‘no’, participants had to elaborate their answer.

The main phase of the experiment was preceded by a training phase (ten warm-up sentences) which aimed at making participants familiar with the task. In the main part of the experiment, participants were shown a set of eight target items, eight control items and four filler sentences (see Appendix for examples). Each target item satisfied the truth conditions of an informationally stronger element (*all*) within a quantifier scale but was described by Pera in terms of a weaker element (*some*). For instance, the target item ‘Some of the crayons are in a pencil-case’ was used in a situation where in fact all of the crayons were in the pencil-case. Control items involved fully appropriate uses of *neki* ‘some’ (e.g. when 3 out of 5 objects were on the table) or the ones in which it yielded a false description (e.g. when none of the objects was on the table). In order to balance the ratio of the yes/no responses, we also included 4 filler sentences (the quantifier being replaced by an adjective). The target items, control items and filler sentences were administered in a pseudo-random order.

## 2.2. Participants

*Experiment 1:* The participants were 27 monolingual Serbian-speaking adults (mean age = 24). They were mainly students recruited from the University of Belgrade. They all performed a visual version of the experiment (made as a Google Docs Questionnaire) which they accessed from their own computers.

*Experiment 2:* The participants were 30 7-year-old and 30 9-year-old monolingual Serbian-speaking children. They were recruited from a primary school in Belgrade. They all performed an audio version of the experiment.

None of the participants reported any vision or hearing difficulties.

## 2.3. Variables

Two conditions were tested in the experiment: the contrastive focus condition was tested as a between-subjects factor, with participants being randomly assigned to one of the conditions.

Contrastive focus had 3 levels: focus on the quantifier, on the predicate phrase, and neutral focus, as in (3). In the visual version of the experiment, the contrastive

focus was marked by capital letters, whereas in the audio version target words were intonationally focalized.

- (3) a. NEKE od bojica su u pernici.  
b. Neke od bojica su U PERNICI.  
c. Neke od bojica su u pernici.  
‘Some of the crayons are in a pecil-case’

We have also controlled for the partitivity condition as a within-subject factor with 2 levels: non-partitive construction (*neke bojice* ‘some crayons’) and partitive construction (*neke od bojica* ‘some of the crayons’).

In Experiment 2, we additionally tested the age condition, as a between-subject factor with two levels: 7-year-olds and 9-year-olds.

In the test trials, where the use of the quantifier *svi* ‘all’ was more informative for the given situations, we expected the participants to reject the sentence based on a scalar inference (answers of the type: *No, he didn’t see well, because all of the crayons are in the pencil-case*). Thus, a dependent measure was the percentage of rejected sentences used in the ‘all’-contexts.

### 3. Results

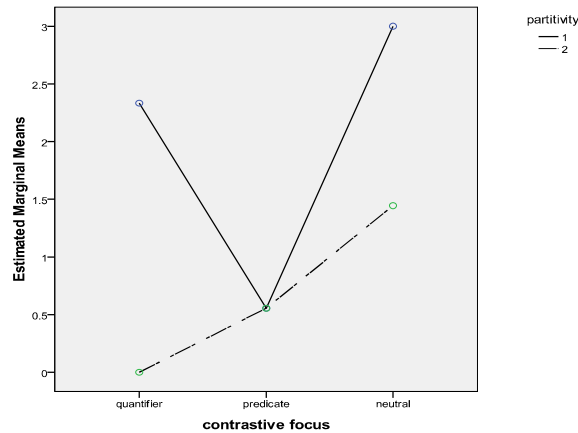
#### *Experiment 1 (Visual experiments with adults)*

General Linear Model Repeated Measures ANOVA test statistics were run on the response percentages with contrastive focus as a between-subjects factor and partitivity as a within-subjects factor. The analysis revealed:

- main effect of focus ( $F=3.812$ ;  $df=2$ ;  $p<0.05$ ), showing that adult participants derived scalar implicatures at a higher rate when the focus was neutral or placed on the quantifier, whereas the focus on the predicate phrase inhibited scalar implicatures;
- main effect of partitivity ( $F=18.081$ ;  $df=1$ ;  $p<0.05$ ), showing that partitive construction gave rise to more scalar implicatures than the non-partitive one;
- reliable interaction of focus and partitivity ( $F=5.063$ ;  $df=2$ ;  $p<0.05$ ), showing that the neutral focus or the focus on the quantifier had more

effect when the partitive construction was used, whereas the non-partitive construction blocked the scalar interpretation.

Scheffe post-hoc test revealed that the difference between the stimuli was mainly carried out by the difference between the neutral focus and the focus on the predicate (p=0.039).



**Figure 1:** The effect of focus and partitivity on scalar implicatures (adults)

The overall percentage of derived SIs is given in Table 1. We calculated the percentage of SIs based on the overall number of rejected target utterances with regard to the overall number of target stimuli per condition.<sup>76</sup>

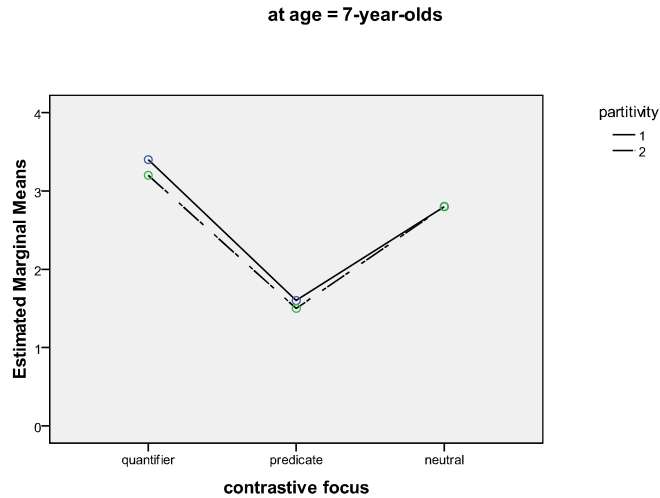
<sup>76</sup> It is worth mentioning that there are two methods of calculating the number/percentage of derived scalar implicatures, although in the literature we rarely find explicit elaboration of the method being used. We assume the choice of a method might affect different results among studies. The first method includes calculating the number of participants who reject target utterances, indicating in the results that a given number of participants derives SIs. Following Pouscoulous et al. 2007 who investigated the role of partitivity in deriving scalar inferences, we have used this method in our paper on how partitivity affects availability of SIs (Mirić, Arsenijević 2014). However, we think that this method is not quite precise because a participant could be considered as being able to derive the implicature if (s)he rejected all of the target utterances or only a certain proportion of them – and this proportion may vary among different experiments and papers. The second method includes calculating the number/percentage of rejected utterances with regard to the overall number of target stimuli per condition, and this method has been used in this paper. Besides avoiding the arbitrariness, this method better suits the statistical data we have provided based on the ANOVA analysis.

focus	quantifier		predicate		neutral		overall	
	part	non-part	part	non-part	part	non-part	part	non-part
<b>SIIs %</b>	58,3 %	0%	13,9%	13,9%	75%	36,1%	49%	16,7%

**Table 1:** The percentage of derived scalar implicatures with regard to focus and partitivity

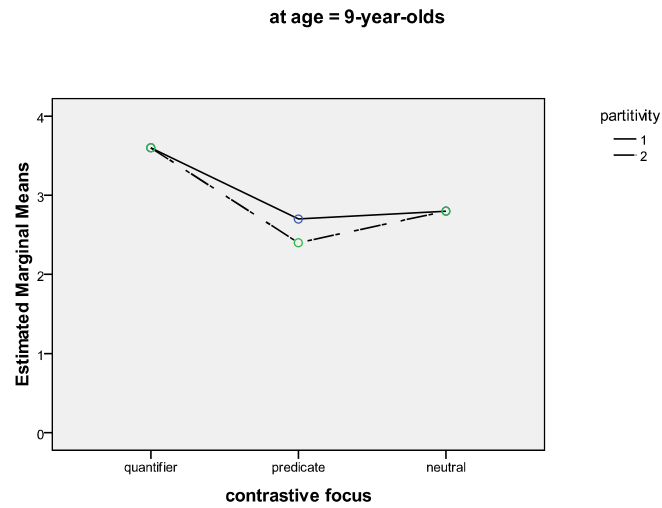
*Experiment 2 (Audio experiments in progress: children)*

General Linear Model Repeated Measures ANOVA test statistics were run on the response percentages with contrastive focus and age as between-subjects factors and partitivity as a within-subjects factor. The analysis revealed a main effect of focus ( $F=3.220$ ;  $df=2$ ;  $p<0.05$ ), showing that 7- and 9-year-old children derived scalar implicatures at a higher rate when the focus was placed on the quantifier. In addition, Scheffe post-hoc test revealed that the difference between the stimuli was mainly carried out by the difference between the focus on the quantifier and the focus on the predicate ( $p=0.048$ ). However, there were no effects of partitivity nor age, nor any interactions between the conditions.



**Figure 2:** The effect of focus and partitivity on scalar implicatures (7-year-olds)





**Figure 3:** The effect of focus and partitivity on scalar implicatures (9-year-olds)

The overall percentage of derived scalar implicatures with regard to age is given in Table 2. We calculated the percentage of SIs based on the overall number of rejected target utterances with regard to the overall number of target stimuli per condition.

focus	quantifier		predicate		neutral		overall	
	part	non-part	part	non-part	part	non-part	part	non-part
<b>7-y-o SIs %</b>	85%	80%	40%	37.5%	70%	70%	65%	62,5%
<b>9-y-o SIs %</b>	90%	90%	67.5%	60%	70%	70%	75,8%	73,3%

**Table 2:** The percentage of derived scalar implicatures with regard to focus and partitivity

#### **4. Discussion**

This paper reports on two experiments manipulating the contrastive focus in sentences which trigger scalar implicature. In Experiment 1 adult speakers of Serbian read sentences, whereas in Experiment 2 7- and 9-year-old children listened to prerecorded sentences. Our results show that contrastive focus affects the availability of scalar implicature: a sentence with the quantifier *neki* ‘some’ is more likely to give rise to a scalar implicature when the quantifier is focalized than when the focus is on the predicate phrase. Additionally, neutral focus also gives rise to more implicatures, indicating that in the given context, the relevant set of alternatives is generated for the quantifier expression, not the predicate phrase.

In Experiment 1 the highest SI-rates are obtained for the neutral focus (75% when the partitive construction was used), showing that scalar alternatives are more available to adult speakers of Serbian when they read a sentence without any marked focus on the words, allowing them to distribute focus on their own. One could think that this finding justifies the previous experimental designs which used only neutral stimuli, since it triggers the SIs at the highest rates. However, we think that this should not be the case, given that the analysis showed significant difference between other two focus positions: participants more often assigned strong interpretation to the quantifier when the quantifier itself was marked in comparison to the focalized predicate, although it is worth mentioning that the partitive construction significantly supported the scalar interpretation of the quantifier (cf. 58% for the partitive and 0% for the non-partitive when the quantifier was focalized).

In Experiment 2, scalar alternatives were also highly available to children when neutral focus was used (70% for both partitive and non-partitive construction in both age groups), although the highest rate of SIs was achieved when the quantifier was focalized (above 80% for both age groups). This finding strongly indicates that contrastive focus on the quantifier affects the availability of scalar inferences in the audio version of the experiments. Although the experiments with children are still in progress, we can say that the absence of developmental difference between the ages of 7 and 9 conform to the previous findings that starting from the age of 7 children are successful at deriving scalar implicatures (Gualmini et al. 2001, Papafragou et al. 2003), although other authors report on the lack of the ability to compute the inferences at the ages of 7 (Noveck 2001) or even 9 (Chierchia et al. 2001). However, in order for us to fully understand our data and investigate the

potential effects of age, other ages – children at the age of 5 and adult speakers – should participate in the same version of the experiment. Based on our findings we can only state that children at the age of 7 and 9 have the pragmatic capacity to derive scalar implicatures and they are sensitive to contrastive focus in the process of derivation.

It is important to note that, as post-hoc Scheffe test showed for both adults and children, focus on the predicate significantly blocked the scale of quantifier alternatives. As we predicted, the focalized predicate was part of the sentence for which the alternatives were generated, thus making the quantifier alternatives less available. In addition, in Experiment 1 the otherwise significant partitivity effect was blocked when the predicate was focalized.

These findings go in line with the assumption that a focalized word draws more attention and triggers its own set of alternatives. When the quantifier is focalized, its scalemates become more prominent in the context, which enables the participants to contrast them and infer that the stronger one does not hold (accessing the scalar implicature). On the other hand, the focus on the predicate phrase triggers its own set of alternatives, which makes the quantifier set of alternatives less relevant. These results provide empirical support for the contextualist account of scalar implicatures, adding contrastive focus to the list of contextual factors that influence the process of deriving SIs.

It is noteworthy that Serbian adult speakers derive scalar implicatures at a lower rates than previous studies reported for other languages. This overall low percentage of SIs might indicate the dominance of logical interpretation of the quantifier *neki* ‘some’ in Serbian, so cardinal (weak) interpretation is shown to be the default one, at least when a sentence is in a written form. This finding would go against the predictions of the defaultist accounts, showing that SIs are not generated by default and automatically and calls into question what Degen calls the Frequency Assumption (Degen 2013) – a previous claim that scalar inferences are regular and frequent (cf. Levinson 2000, Breheny, Katsos & Williams 2006 among others). Nevertheless, bearing in mind children’s high performance, we assume that experimental design could have contributed to the lower rates of SIs in adults. This brings us to the very important methodological issue regarding our as well as previous developmental experiments. First of all, we think that the results obtained for adult speakers in Experiment 1 and the ones for children in Experiment 2 are not comparable, given that they participated in different modalities of experiment, namely – reading and listening to the sentences. Although other studies (Chevallier

et al. 2008, Schwarz, Clifton & Frazier 2008, Zondervan 2010) reported the difference in SI-rates with respect to modalities, showing that the spoken sentences gave rise to more SIs than the written ones, in our experimental design the comparison might cause a potential confound, because there are different age groups in the two experiments. Therefore, it is necessary to complete experiments with different age groups in order to compare the two modalities. Other developmental studies often combine these two modalities (see Papafragou & Musolino 2003, Katsos et al. 2012, among others), giving the adults to read the task and provide written answers, whereas children listen to the sentences. However, bearing in mind the difference between written and spoken stimuli obtained with regard to the contrastive focus, we think that in future studies adults should also follow the same experimental procedure as children. Our findings also suggest that the role of modalities (visual vs. audio) might be fruitful area of investigation of SI derivation and sentence interpretation in general.

Finally, we would like to emphasize several advantages of audio experiments that arise with respect to the role of contrastive focus on SIs. The most obvious is the fact that generally in spoken language at least one word usually bears contrastive focus in a sentence, whereas in a written form words are rarely put in capital letters. This is why the results obtained using the audio material are more indicative of the role that contrastive focus has. In addition, in the audio version of the experiment, participants have the opportunity and more time to elaborate their answers, which could give us a qualitative insight in their doubts and dilemmas which are usually not available to researchers when analyzing written answers. Participants spontaneously gave explanations of their answers or the situations in the pictures they observed, which could help researchers to interpret the data and improve the methodology.

## **5. Conclusion**

This study reports on how contrastive focus affects the availability of scalar inferences. We showed that scalar implicatures are more likely to be computed when the focus is on the quantifier or neutral than when it is on the predicate. This finding shows us that: a) contrastive focus enables participants to generate relevant set of alternatives, which in the case of the quantifier alternatives results in scalar interpretation, b) in most of the cases, sentences with neutral focus are actually interpreted as having the focalized quantifier. Nevertheless, given that the percentages of SIs vary, we can say that the role of focus is not absolute, as already noted by Chevallier et al (2008): the focus makes the scalar interpretation more

available, although not necessary. Focus simply makes the alternatives more salient in the context, making the scalar implicature more available.

Our results conform to recent findings that the strength of SIs is probabilistically modulated by multiple contextual clues (Degen, Gunlogson, Tanenhaus 2013). This corpus and web-based study showed that scalar inferences from *some* to *not all* are far less frequent than commonly assumed, and implicature strength is correlated with overt partitivity, quantifier strength and discourse accessibility. Our study brings contrastive focus to the list of contextual factors that affect scalar interpretation of the quantifiers.

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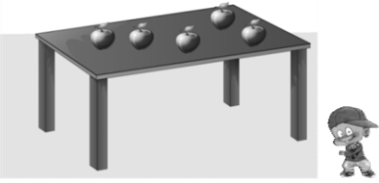

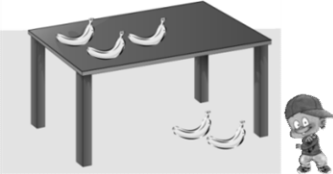

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**Appendix**

Examples of stimuli (original pictures were in colour)

<p>We picked five apples from the tree.</p>  <p><b>Target item</b> (5/5): Some (of the) apples are on the table. Question: Did Pera see it well?</p>	<p>Five birds live in the park.</p>  <p><b>Filer item:</b> (The) red birds are in the tree. Question: Did Pera see it well?</p>
<p>We brought five bananas from the market.</p>  <p><b>Control item</b> (3/5): Some (of the) bananas are on the table. Question: Did Pera see it well?</p>	<p>We got five balls for birthday.</p>  <p><b>Control item</b> (0/5): Some (of the) balls are on the table. Question: Did Pera see it well?</p>



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## LEXICON, MARKEDNESS AND GRAMMAR IN THE SERBOCROATIAN WOBBLY *A*

**Abstract:** SerBoCroatian (henceforth SBC) displays a zero:*a* alternation within paradigms, which always has the effect of disrupting consonant clusters in certain forms of a word (e.g. in *koverat~koverat-a* ‘envelop NOMSG~GENSG’). This alternation is traditionally termed *nepostojano a* ‘wobbly *a*’. We present an overview of the contexts in which the ‘wobbly *a*’ alternation is attested and argue for an OT-analysis which requires no special ‘wobbly’ segments, and distinguishes between an epenthetic and a metathetic wobbly *a*, which surface in different phonological contexts triggered by different morphemes. We further account for the observed underapplication of the two types of ‘wobbly *a*’ using a special type of Faithfulness indexed to loanwords (DEP(LOAN)) and Lexical Conservatism, respectively. We finally discuss dynamics of the present-day SBC lexicon, in which the class of words which allow wobbly *a* acts like a closed class and the traditionally inseparable ST clusters (which were originally treated as single segments) show different signs of reanalysis into regular clusters.

**Key words:** *Serbo-Croatian, Wobbly a, Metathesis, Epenthesis, Loanword Faithfulness, Lexical Conservatism.*

### 1. Introduction

SerBoCroatian (henceforth SBC) displays a zero:*a* alternation within paradigms, which always has the effect of disrupting consonant clusters in certain forms of a noun. This means that there are at least two types of *a* in SBC, as recognised in all traditional descriptions: one that surfaces in all forms of the word (and can therefore safely be assumed to be underlying) and the other which occurs only in some forms.

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The paradigms of the two nouns in (1) differ in that the stem of *karat* ‘carat’ contains only undoubtedly underlying *a*’s, which surface in all forms in the paradigm. On the other hand, in the paradigm of *koverat* ‘envelope’ the stem-internal *a* surfaces only in two forms – NOMSG and GENPL, whereas it is absent from all the other forms. This latter type of *a* is traditionally termed *nepostojano a* ‘fleeting, wobbly *a*’ (for a discussion of the term and the concept, see Mihaljević & Horvat 2007).

(1)	NOMSG	GENSG	NOMPL	GENPL
(a)	<i>karat</i>	<i>karata</i>	<i>karati</i>	<i>karata</i> <sup>78</sup>
(b)	<i>koverat</i>	<i>koverta</i>	<i>koverti</i>	<i>koverata</i>

What we have seen in (1) can be summarised as the disruption of stem-final consonant clusters in NOMSG and GENPL. However, not all nouns whose stem ends in a consonant cluster exhibit this alternation. (2) shows two nouns in which zero:*a* alternation underapplies. In *koncert* ‘concert’, it applies only in GENPL, whereas in *jogurt* ‘yogurt’, it does not apply at all. Finally, there are no SBC nouns which display the pattern opposite to that of *koncert*: in no noun with a full paradigm is it the case that the alternation applies only in NOMSG.

(2)	NOMSG	GENSG	NOMPL	GENPL
(a)	<i>koncert</i>	<i>koncerta</i>	<i>koncerti</i>	<i>koncerata</i>
(b)	<i>jogurt</i>	<i>jogurta</i>	<i>jogurti</i>	<i>jogurta</i>
(c)	*[poncerat	poncerta	poncerti	poncerta]

Alternations of the type presented in (1b) and (2a) are typically discussed under the rubric of Slavic yer(s) in the formal phonological literature (see e.g., Inkelas & Zec 1988, Halle & Nevins 2009). What these approaches have in common is replicating the historical development of the Slavic *yers*. The assumption is then that there are still abstract units, *yers*, in the underlying representation of the words which have wobbly *a*, and grammar essentially decides which of the two possible realisations – *a* or *zero* – it will have in each form. While such approaches make use of the historical rule, which became known under the name Havlík’s law, in order to account for the conditions under which *yer* surfaces in NOMSG, the occurrence of

<sup>78</sup> The GENPL form has its own prosodic specificities. The two final syllables of the GENPL form are long. Also, in many cases the GENPL form has a different tonal pattern from the rest of the paradigm. While recognising that the prosodic pattern may be necessary to complete the picture, this paper ignores the prosodic information and focuses exclusively on segmental alternations.

wobbly *a* in GENPL is more problematic: as can be seen in (1) and (2) the suffix is segmentally equal to that of GENSG, but it triggers the insertion of a wobbly *a*. The usual solution is then to assume that the derivation of GENPL is exceptional in that it involves an extra cycle, in which the *yer* is vocalised before the suffix is added. Note that these approaches need to account for a rather peculiar distribution of these abstract *yers*: they never occur in any context other than between two last consonants of stems ending in a consonant cluster.

The aim of this paper is to propose an alternative analysis, in which there are no special underlying segments involved. Rather, different modules come into play to explain the wobbly *a* phenomenon: Lexicon, Markedness and Grammar. We propose a model couched in the framework of Optimality Theory (henceforth OT), in which the ranking of faithfulness and markedness constraints accounts for the selection of an optimal output. This will essentially mean that reducing markedness will be invoked as the motivation for this alternation. In other words, the introduction of a wobbly *a* prevents a marked structure – a consonant cluster and, as will be shown later, a hiatus – from surfacing.

As can already be read off the examples in (1) and (2), a merely phonological account is not possible, since among nouns with identical phonological structure some do display *a:zero* alternation in all contexts (1b), some do it only in a subset of contexts (2a), while others do not display it at all (2b). This information must be stored lexically. As will be shown, the grammar is on the move in present-day SBC and the issue of lexical storage is a matter of an interaction of various factors at the grammar-lexicon interface.

## 2. Account

The crucial feature of our proposal is a conceptual separation between the wobbly *a*'s in the two contexts. What superficially looks as the same object, i.e. an epenthetic low vowel, is in fact the realisation of two different objects: an actual epenthetic vowel which occurs in certain nouns in the NOMSG form – as in *koverat*, whose underlying form is /koverɫ/ – and a metathetic *a*, which is part of the discontinuous GENPL morpheme /a:a:/.

In both cases, it is Markedness that triggers the wobbly *a*'s surfacing within the stem. In the case of the epenthetic *a* (in forms like [koverat]), it is the Markedness constraints against complex codas that require the insertion of a vowel (thereby blocking forms of the type \**koverɫ*). In the case of the metathetic *a*, Markedness

constraints block /a:a:/ from emerging faithfully and it therefore always spreads over two syllables, surfacing as [a:Ca:] (where C = any consonant), e.g., [kovera:ta:].

The central piece of evidence for the existence of two types of wobbly *a* comes from their distribution. “True” epenthetic *a* displays a regular pattern, as it disrupts all complex codas in all native and quite some borrowed nouns. The behaviour of metathetic *a*, on the contrary, appears to be a locus of massive variation and highly dependent on the paradigm shape, morphological constituency, lexical frequency, etc. Moreover, the “unpronounceable” shape of the GENPL ending helps us explain why in GENPL the wobbly *a* initially seems to disrupt a consonant cluster which occurs in the majority of the forms of the noun. In other words, GENPL is not less tolerant than GENSG when it comes to consonant clusters, it can simply afford to disrupt the consonant cluster by virtue of realising all the segmental material of the suffix.

## 2.1. OT Formalisation

The insertion of “true” epenthetic *a* can be formalised in OT considering the constraints in (3) and the ranking in (4).

(3)

MAX-STEM	Input segments belonging to the stem must have a correspondent in the output.
DEP (No epenthesis).	Output segments must have a correspondent in the input.
*COMPLEXCODA	Complex codas are not allowed.
*[LOW]	The feature [LOW] is banned from the output.
*[HIGH]	The feature [HIGH] is banned from the output.

The crucial markedness constraint \*COMPLEXCODA captures the markedness-reducing nature of the *a*-epenthesis in SBC: it serves the purpose of repairing a structure which would surface in many faithful outputs: complex codas.

(4)

 $\text{MAX} > * \text{COMPLEXCODA} > \text{DEP} > *[\text{HIGH}] > *[\text{LOW}]$ 

 Tableau 1: *koverat*, NOMSG

Input: /kover/	MAX-STEM	*COMPLEX CODA	DEP	*[HIGH]	*[LOW]
a) [kover]		*!			
□ b) [koverat]			*		*
c) [kover]	*!				
d) [kove]	*!*				
e) [koverit]			*	*!	

Tableau 1 shows the evaluation through which candidate (b) emerges as the winner. The most faithful candidate, which is (a), is ruled out because it fatally violates \*COMPLEXCODA, which is quite high in the hierarchy. Candidate (c) avoids the violation of \*COMPLEXCODA by deleting the last consonant, but incurs a violation of MAX-STEM, the highest-ranking constraint. Candidate (d) dispenses with the coda cluster altogether, thus violating MAX-STEM twice. Both candidates (b) and (e) violate DEP, but while (b) inserts a low vowel in order to disrupt the cluster, (e) inserts a high one. Since \*[HIGH] is ranked higher than \*[LOW], candidate (b) is the winner.

As we have already seen, not all nouns which end, underlyingly, in two consonants behave as *koverat*: many loanwords avoid epenthesis. We therefore assume that a subclass of faithfulness constraints, FAITH(LOAN), which only applies to items marked in the lexicon as loanwords, protects some of them and allows the consonant cluster to surface. In this specific case, we just need to rank DEP(LOAN) higher than \*COMPLEXCODA.

Tableau 2: *koncert* ‘concert’ NOMSG

Input: /kɔntsert/	DEP(LOAN)	MAX-STEM	*COMPLEX CODA	DEP	*[LOW]
□a) [kɔntsert]			*		
b) [kɔntserat]	*!			*	*
c) [kɔntser]		*!			
d) [kɔntse]		*!*			

All candidates except (a), which is the most faithful one, violate either DEP(LOAN) or MAX-STEM, therefore (a) is the only possible winner.

As for metathetic *a*, it can be analysed as the result of a ranking where \*HIATUS (“Sequences of two vowels are disallowed”) is undominated and where MAX-SUFFIX (“Do not delete input segment belonging to the suffix”) dominates LINEARITY “No metathesis”.

Tableau 3: *koverata* ‘envelope’ GENPL

Input: /kɔvert + a:a:/	*HIATUS	MAX-STEM	MAX-SUFFIX	LIN	*[LOW]
a) [kɔverta:a:]	*!				**
□b) [kɔvera:ta:]				*	**
c) [kɔverta:]			*!		*

In Tableau 3 candidate (a) is the most faithful to the input, but maintaining the genitive plural morpheme as such incurs the fatal violation of \*HIATUS, which is ranked higher than faithfulness constraints. Candidate (c) deletes one of the two long vowels, violating MAX-SUFFIX. Candidate (b) is therefore the winner, since it only violates the low-ranked constraint LINEARITY.

Tableau 4: *koncerata* ‘concert’ GENPL

Input: /kɔntsert + a:a:/	*HIATUS	DEP (LOAN)	MAX- SUFFIX	LIN	*[LOW]
a) [kɔntsɛrta:a:]	*!				**
b) [kɔntsɛrta:]			*!	*	*
□ c) [kɔntsera:ta:]				*	**

Tableau 4 shows the emergence of the GENPL of the loanword *koncert*, which in this case behaves exactly like native(-like) nouns and selects (b) as the winning candidate. As a matter of fact, since the wobbly *a* in *koncerata* is not epenthetic, its occurrence does not entail the violation of DEP(LOAN).

Up to this point, we have accounted for all the forms which are derived by the grammar *stricto sensu*, defined as a ranking of universal constraints, which evaluates the possible outputs and/or compares them to inputs which consist of (concatenations of) established underlying representations. Note that even in this picture, some lexical perspective is present: a class of Faithfulness constraints is indexed to a lexical stratum which allows more marked structures than the rest of the lexicon – that containing loanwords. However, this is still a domain of grammar in the sense that we recognise lexical stratification as a universal *possibility*, which is reflected in various categories (stems, nouns, content words etc.) allowing more marked structures than the rest of the lexicon, formalisable as faithfulness constraints indexed to these categories.

The relations between different types of special Faithfulness are not the object of our consideration here, but it is important to note that such relations are already implied in some of the mechanisms employed so far. For instance, since we are making the distinction between FAITH-STEM and FAITH-SUFFIX, and since there are no inflectional morphemes which are marked as borrowings, FAITH(LOAN) can be interpreted as FAITH-STEM(LOAN), defining an even more “liberal” layer with respect to that defined by FAITH-STEM. This corresponds to an onion-like perspective of the lexicon, which we envisage as a universal possibility with important theoretical consequences, which we leave for further research to explore.

So far, we have sketched what grammar would do in each case if the underlying representation were the only representation to be considered and if representations were not susceptible to restructuring. However, SBC nouns always appear in

paradigms, and the interactions between the forms in the paradigm is decisive for what can surface in them. For this reason, from this point on, we are moving to considering separate paradigms. This will prove beneficial because, as we shall see, different factors will play a role in each case.

## **2. Masculine nouns ending with a consonant**

Since all the nouns used as examples so far belong to this class, which is also the only one containing paradigms where both the epenthetic and the metathetic wobbly *a* surface, in this section we are essentially completing our account of the rather complicated constellation of masculine nouns.

Considering paradigms, it is important to underline that, albeit conceptually distinct, the two wobbly *a*'s do introduce the same allomorph when they surface. For instance, in the case of [koverat], with [a] occurring between [r] and [t], this allomorph can be both the result of epenthesis, as in the NOMSG, and metathesis, as in the GENPL [kovera:ta:].

It is a commonly observed phenomenon that, within morphological paradigms, the occurrence of a certain feature in one paradigm cell can license the occurrence of the same feature in another cell. In order to formalise this tendency in phonology, we make use of Steriade's *Lexical Conservatism* (1997).

(5) The form of lexical conservatism conditions: Lex (P)

Let  $T(\mu)$  be the allomorph of  $\mu$  appearing in a form under evaluation.

Let  $L(\mu)$  be a listed allomorph of  $\mu$ .

Let  $P$  be a phonological property.

$T(\mu)$  is characterized by  $P$  only if some  $L(\mu)$  is characterized by  $P$ .

The mechanism proposed by Steriade predicts that morphological paradigms will tend to be conservative when it comes to introducing new allomorphs. Members of a paradigm will extend phonological features that already exist to other members of the same paradigm. In SBC, this seems to be the reason why no native words in the class under consideration fails to disrupt their stem-final consonant clusters in both NOMSG and GENPL: the allomorph with a wobbly *a* is “ushered” by the exceptionless epenthesis in native words and surfaces also in GENPL in these words.

When it comes to loanwords, variation emerges, again as a result of LEXCON



constraints, which now play a rather different role in paradigm formation. This leaves us with the typology of nouns in this class repeated here as (6).

(6)	NOMSG	GENSG	NOMPL	GENPL
(a)	<i>koverat</i>	<i>koverta</i>	<i>koverti</i>	<i>koverata</i>
(b)	<i>koncert</i>	<i>koncert</i>	<i>koncerti</i>	<i>koncerta</i>
(c)	<i>jogurt</i>	<i>jogurta</i>	<i>jogurti</i>	<i>jogurta</i>
(d)	*[poncerat	poncerta	poncerti	poncerta]

The data in (6) indicate the existence of three subclasses within this class of masculine nouns. (6a) is an example of a group of nouns which exhibit epenthetic *a* in the NOMSG and metathetic *a* in the GENPL. Other nouns, like *koncert* in (6b), only have metathetic *a* and nouns behaving like *jogurt*, in (6c), do not display either epenthetic or metathetic *a*. Crucially, (6d) shows that among the four logical possibilities one is missing: there is no noun with epenthetic *a* but no metathetic one.

The model proposed so far accounts for the facts in (6a) and (6b), the difference between the two being that only *koncert* is under the auspices of FAITH(LOAN), although both words are etymologically loanwords. As for the gap in (6d), we propose to interpret this gap as evidence that the NOMSG serves as the licenser. This licensing relation has the important consequence that since epenthesis does not fail in any native items, metathesis is also omnipresent. This “ushering” relation actually masks the fact that in SBC metathesis is often blocked in cases where it introduces a new allomorph without the support of NOMSG. This division is already visible in the split between the types (6b) and (6c) in masculine nouns.

The only class which still needs to be accounted for is that of borrowings of the type (6c) *jogurt*. While the stem of this noun ends in the same cluster as *koncert* and *koverat*, it does not display either epenthetic or metathetic *a*.

Tableau 5: *jogurt* ‘yogurt’ NOMSG

Input: /jogurt/	DEP(LOAN)	MAX-STEM	*COMPLEX CODA	*[LOW]
□a) [jogurt]			*	
b) [jogurat]	*!			*
c) [jogur]		*!		
d) [jogu]		*!*		

The NOMSG of *jogurt* is [jogurt], entirely equivalently to *koncert*, since the insertion of a vowel would imply a violation of DEP(LOAN) and the simplification of the complex cluster is not a viable solution given that MAX-STEM is ranked higher than \*COMPLEXCODA.

Crucially, unlike *koncert*, *jogurt* allows no metathesis, which is still not predicted by our grammar, as tableau 6 shows.

Tableau 6: *jogurta* ‘yogurt’ GENPL

Input: /jogurt + a:a:/	*HIATUS	DEP (LOAN)	MAX-SUFFIX	LIN	*[LOW]
a) [jogurta:a:]	*!				**
□b) [jogura:ta:]				*	**
□c) [jogurta:]			*!		*

The current ranking predicts the victory of (b), *jogurata*, with metathetic *a*, but the actual output is *jogurta*, i.e. candidate (c). Our solution to this incongruence is positing that in the paradigm formation of *jogurt* LEXCON (henceforth LC) constraints play a crucial role. Here, it should be kept in mind that LC constraints only play a role when not all forms in the paradigm are established and a candidate form is about to introduce a new allomorph. In that sense, we are not necessarily claiming that LC for *jogurt* is ranked higher than in *koncert* and *koverat*, but that at a certain point in the development of SBC, blocking metathesis became an option. In other words, unlike *koncert*, *jogurt* belongs to a class in which the form with

metathesis is blocked by LC.

In order to maintain the same constraint set across tableaux, we have added LC to the end of the ranking for *koverat* and *koncert* (see Tableau 7), but we not excluding the interpretation under which LC actually does not figure in the calculation of the forms of these nouns.

Tableau 7: *koverata*, *koncerata* vs. *jogurta*

Input: /koverat + a:a:/, Listed allomorphs: <i>koverat</i>	*HIATUS	MAX-SUFFIX	LINEARITY	LEXCON
a) [koverta:a:]	*!			
☞ b) [kovera:ta:]			*	
c) [koverta:]		*!		
Input: /koncert + a:a:/, Listed allomorphs: <i>koncert</i>	*HIATUS	MAX-SUFFIX	LINEARITY	LEXCON
a) [kontserta:a:]	*!			
☐ b) [kontsera:ta:]			*	*
c) [kontserta:]		*!		
Input: /jogurt + a:a:/ Listed allomorphs: <i>jogurt</i>	LEXCON	*HIATUS	MAX-SUFFIX	LIN
a) [jogurta:a:]		*!		
b) [jogura:ta:]	*!			*
☐ c) [jogurta:]			*	

Tableau 7 is the formalisation of our hypothesis, according to which the role of LC is greater in *jogurt* than in *koncert* and *koverat*. This does not necessarily need to be an indicator of the moment of borrowing: it may be due to the low prominence of the plural forms of *jogurt*. Importantly, it is also generally true that all nouns

currently entering SBC behave like *jogurt*. The tentative generalisation would then be that, in frequent, native-like words, all paradigm cells are filled and LC plays no role, or can be considered as ranked lower than \*HIATUS, MAX-SUFFIX, and LIN. On the other hand, in words which are new to speakers, infrequent or non-native, LC is undominated.

This means that the classes in (6a-c) all GENPL forms are computed in different ways. In the case of *koverat*, two allomorphs are listed in its representation: *kovert* and *koverat*, therefore the GENPL form is licensed by the NOMSG. Hence, even if LC were ranked higher in the hierarchy, *koverata* would still be a possible GENPL form. In *koncert*, instead, *\*koncerat* is not a listed allomorph and *koncerata* emerges as the GENPL form only because MAX dominates LIN (and LC). Finally, *jogurta* is the optimal GENPL output of *jogurt* because LC dominates all the other relevant constraints, disallowing the creation of the previously unattested allomorph *\*jogurat*.

In sum, this case of variation of SBC masculine nouns in a consonant can only be analysed taking into account that introducing a new allomorph comes at a cost. While the difference between native words and borrowings is formalised through the use of FAITH(LOAN) constraints, differences within the two classes of loanwords depends on the degree of novelty/foreignness – expressed by the ranking of LEXCON. This analysis allows us to emphasise the difference in ontological status of paradigm members, which also seems to play a role. While the citation form – NOMSG – has a single exponent, the GENPL form can be marginal for many items and therefore displays much more inter- and intra-speaker variation.

Since in present day SBC, new items never introduce extra allomorphs due to metathesis, we conjure that Tableau 7 actually represents a historical phase in the development of SBC, whereas nowadays LC is undominated and all items which allow metathesis have a listed allomorph, as shown in Tableau 8.

Tableau 8: *koverata*, *koncerata* and *jogurta* in Modern SBC

Input: /koverat + a:a:/, Listed allomorphs: <i>koverat, koverat</i>	LEXCON	*HIATUS	MAX-SUFFIX	LIN
a) [koverta:a:]		*!		
□ b) [kovera:ta:]				*
c) [koverta:]			*!	
Input: /koncert + a:a:/, Listed allomorphs: <i>koncert, koncerat</i>	LEXCON	*HIATUS	MAX-SUFFIX	LIN
a) [kongserta:a:]		*!		
□ b) [kongsera:ta:]				*
c) [kongserta:]			*!	
Input: /jogurt + a:a:/ Listed allomorphs: <i>jogurt</i>	LEXCON	*HIATUS	MAX-SUFFIX	LIN
a) [jogurta:a:]		*!		
b) [jogura:ta:]	*!			*
□ c) [jogurta:]			*	

Note that in the new system, there is apparently no difference between *koverat* and *koncert* when it comes to GENPL. However, this is not entirely true in the sense that the second listed allomorph (the one with a wobbly *a*) is still licensed by the NOMSG for *koverat*, whereas for *koncert*, its listedness is a matter of encoding the output of an older state of the grammar in the lexical entry. Also note that having listed the allomorph [kongserrat] in the lexical entry by no means predicts that this allomorph will surface in NOMSG, since the NOMSG is crucially calculated based on the concatenation of the stem and a zero suffix and DEP(LOAN) still blocks

epenthesis.

### 3. Neuter nouns ending in *-o* / *-e*

As already mentioned, masculine nouns in a consonant are the only class in which both the epenthetic and the metathetic *a* occurs. Considering only this class produced the illusion that native words always allow metathesis. This picture was complicated already in loanwords which enter the same inflection class, where some of the items allow metathesis.

In this section, we are turning to neuter items, whose declensions are different from the masculine ones in very few paradigm cells, among which the citation form, which now always has a vowel ending: either *-e* or *-o*. Since the citation form of these nouns ends in a vowel, there is no epenthesis in the NOMSG. This noun class still exhibits metathetic *a* in the GENPL, but the wobbly *a* underapplies heavily, especially in infrequent forms. Examples are given in (7).

(7)	NOMSG	GENSG	NOMPL	GENPL	Gloss
(a)	<i>koplje</i>	<i>koplja</i>	<i>koplja</i>	<i>kopalja</i>	‘spear’
(b)	<i>bezumlje</i>	<i>bezumlja</i>	<i>bezumlja</i>	<i>bezumlja</i>	‘lack of reason’
(c)	<i>staklo</i>	<i>stakla</i>	<i>stakla</i>	<i>stakala</i>	‘glass’
(d)	<i>poreklo</i>	<i>porekla</i>	<i>porekla</i>	<i>porekla</i>	‘origin’

As can be seen, (7a) and (7c) show the emergence of metathetic *a*, whereas (7b) and (7d) do not. It appears that especially in this class, which consists only of native items, there is a considerable inter-speaker variation and many cases with prevalent ineffability. For instance, in the first author’s idiolect, *platno* ‘linen’, *pisamce* ‘letter-DIM’ and *dno* ‘bottom’ have no acceptable GENPL forms<sup>79</sup>.

Just like the previous class, neuter nouns can be accounted for using two grammars, which are probably stages in the development of SBC: one in which only the nouns blocking metathesis are influenced by LC and the other, in which no neuter noun allows metathesis unless there is a listed allomorph in the lexical entry.

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<sup>79</sup> For these specific items, the failed form with a wobbly *a* also introduces a new tonal pattern, unattested elsewhere in the paradigm. The study of ineffability would profit much from including prosodic information and the LC constraints sensitive to it in the analysis.

Tableau 9: *stakala* ‘glass’ GENPL

Input: /stakl + a:a:/ Listed allomorph: <i>stakl-</i>	*HIATUS	MAX-SUFFIX	LIN	LEXCON
a) [stakla:a:]	*!			
<input type="checkbox"/> b) [staka:la:]			*	*
c) [stakla:]		*!		

Tableau 10: *porekla* ‘origin’ GENPL

Input: /porekl + a:a:/ Listed allomorph: <i>porekl-</i>	LEXCON	*HIATUS	MAX-SUFFIX	LIN
a) [porekla:a:]		*!		
b) [poreka:la:]	*!			*
<input type="checkbox"/> c) [porekla:]			*	

Tableaux 9 and 10 illustrate the GENPL selection for *stakala* and *porekla*. The two rankings identified earlier, which were able to account for the different behaviour of *koverat*, *koncert* vs. *jogurt*, prove to be applicable to neuter nouns as well. *Stakala* emerges as the winning candidate under a “native-like” ranking where LC is dominated by MAX-SUFFIX and LINEARITY, whereas the victory of *porekla* in Tableau 10 suggests that it obeys the same “non-native” ranking as *jogurt*, where LC is undominated. Candidate (b) *\*porekala* is suboptimal because no listed allomorph licenses the form with wobbly *a*. However, whereas in the case of *jogurt*, the non-native origin of the noun is clearly the reason why LC is ranked higher, the neuter nouns presented in (7) are all native.

Tableau 11: *stakala* and *porekla* in Modern SBC

Input: /stakl + a:a:/ Listed allomorph: <i>stakl-</i> , <i>stakal</i>	LEXCON	*HIATUS	MAX-SUFFIX	LIN
a) [stakla:a:]		*!		
<input type="checkbox"/> b) [staka:la:]				*
c) [stakla:]			*!	
Input: /porekl + a:a:/ Listed allomorph: <i>porekl-</i>	LEXCON	*HIATUS	MAX-SUFFIX	LIN
a) [porekla:a:]		*!		
b) [poreka:la:]	*!			*
<input type="checkbox"/> c) [porekla:]			*	

In present-day SBC, we conjure that the ranking is the same for both nouns, but that *stakala* is possible because – at some point in the history of the grammar – *stakal* emerged as a possible allomorph and was listed, whereas the same did not occur to the unattested *\*porekal*.

#### 4. Feminine nouns ending with *-a*

In the two classes considered so far, the only available GENPL suffix was /a:a:/. The feminine nouns in *-a* also make use of this suffix, but displaying a radically different pattern, due to the availability of another allomorph for GENPL, namely /i:/. This is also the only class where we register serious signs of restructuring with respect to the situation described in SBC grammars, which is why we are first briefly describing the commonalities and specificities of the two stages.

(a) What has always been the case is a clear division between the nouns whose stem ends in a consonant cluster (e.g., *majk-a* ‘mother’) and those whose stem does not (e.g., *rek-a* ‘river’ and *bo-a* ‘boa’). The distinction is that, in the latter group, there is only one possible segmental exponent of the GENPL ending: *-a*, so the GENPL of *reka* and *boa* are segmentally identical to the NOMSG, whereas in the



former group the stem can have an allomorph with a wobbly *a* (*majak-a* ‘mother-GENPL’) and there is also the other version of the ending, which always occurs with the *a*-less allomorph (*majk-i* ‘mother-GENPL’).

(b) What is specific to grammars, but ungrammatical in modern usage (the first author’s idiolect) is the occurrence of the first exponent *-a* with the *a*-less allomorph on CC-final stems. For instance Barić et al. (1997) describe a system in which *majka* is, next to *majaka* and *majki*, a possible GENPL form of *majka*. In the modern usage, forms like *majka* (*a*-less stem + *a*) are entirely impossible for CC-final stems. There also seems to be much more optionality in the older grammars than in modern usage: while *majaka* and *majki* both illustrate possible patterns, only the latter form is grammatical for this noun. On the other hand, *devojka* ‘girl’ only allows *devojaka* in GENPL (but no *\*devojki*).

Given the fact that the situation described in older grammars might very well actually comprise several (dialect) grammars, we are focussing on accounting for the modern grammars. Note that unlike the previous cases of restructuring, the new stage of the grammar and the lexicon does not cover all the forms covered by the older version, although the form of some lexical entries can only be accounted for using the output of the old grammar as input to the modern learners.

An overview of the possible forms of GENPL in the modern usage is given in (8).

(8)	NOMSG	GENSG	NOMPL	GENPL
	Gloss			
(a)	<i>tetka</i> ‘battle’	<i>tetke</i>	<i>tetke</i>	<i>tetaka</i>
(b)	<i>četka</i> ‘brush’	<i>četke</i>	<i>četke</i>	<i>četki</i>
(c)	<i>patka</i> ‘duck’	<i>patke</i>	<i>patke</i>	<i>pataka/patki</i>
(d)	<i>reka</i> ‘river’	<i>reka</i>	<i>reke</i>	<i>reka</i>

(8) shows that stems ending with a consonant cluster may select either /a:a:/ or /i:/ as GENPL allomorph, as in (8a-c), while other stems always select /a:/. In other words, /a:a:/ is generally preferred and the occurrence of /i:/ is a repair strategy which is only allowed when LC blocks metathesis. Crucially, unlike in the other classes, whenever /a:a:/ is used to disrupt consonant clusters, there is a wobbly *a* on the surface (*\*bitka*, *\*četka* are not possible GENPL forms). Note that the total

absence of [a:] as the exponent of GENPL (unlike masculine GENPL *jogurt*[a:], neuter GENPL *bezumlj*[a:]) is additional evidence in favour of the metathesis analysis. In order to explain why the GENPL of *reka* is *rek*[a:] and the GENPL of *četka* is *četki*, we need to postulate that a complex constraint, MAX-SUFFIX&\*CC, is ranked higher than \*[HIGH], where \*CC stands for “No consonant clusters”. Complex constraints are the product of Local Conjunction, whose formal definition is given in (9).

(9) (from Smolensky 2006:68-73):

- a. A constraint C in *Con* may be the **local conjunction** of two simpler constraints in *Con*, A and B: if  $C = A \&_D B$ , then C is violated whenever A and B are both violated within a common domain D.
- b. C may be viewed as implementing the conjunctive interaction of A and B.
- c. Universally, the conjunction dominates its conjuncts:  $A \&_D B \gg \{ A, B \}$ .

Even though some authors argue against the Local Conjunction between a faithfulness and a markedness constraint (e.g., Itô & Mester 1998, Fukuzawa & Miglio 1998), others have claimed them to necessary (e.g., Baković 2000). We argue that MAX-SUFF&\*CC is a plausible combination because it is not likely to produce unnatural outputs, since both constraints are “independently necessary” (Crowhurst 2011:1486). Moreover, it seems to be the only reasonable formalisation of the fact that /i:/ emerges as the GENPL allomorph if (and only if) LC blocks metathesis and the stem ends in a consonant cluster.

Tableau 12: *četki* ‘brush’, GENPL

Input: /tʃetk/ + /a:a:/or /i:/ Listed allomorph: <i>četk-</i>	LC	*HIATUS	MAX-SUFF&*CC	*[HIGH]	MAX-SUFF	*CC	*[LOW]
a) [tʃetka:a:]		*!				*	**
b) [tʃeta:ka:]	*!						**
□c) [tʃetki:]				*		*	
d) [tʃetka:]			*!		*	*	*

In Tableau 12 candidate (c) is the winner because the selection of the non-default GENPL allomorph /i:/ is the only possibility to avoid the violation of HIATUS and MAX-SUFFIX&\*CC without creating a new allomorph. As a matter of fact, the creation of a \*četak- form would violate LC, while candidate (d) is ruled out by the conjoined constraint.

 Tableau 13: *tetka* ‘battle’, GenPl

Input: /tetk/ + /a:a:/or /i:/ Listed allomorphs: <i>tetk-, tetak</i>	LC	*HIATUS	MAX-SUFFIX&*CC	*[HIGH]	MAX-SUFF	*CC	*[LOW]
a) [tetka:a:]		*!				*	**
□b) [teta:ka:]							**
c) [tetki:]				*!		*	
d) [tetka:]			*!		*!	*	*

The ranking shown in Tableau 13 is the same as in Tableau 12, with the difference that this time an allomorph displaying wobbly *a* is listed in the lexicon, as an output of the old grammar. Therefore, the selection of the default GENPL allomorph /a:a:/ proves to be the ideal solution. In fact, candidate (b) avoids hiatus, does not delete any material and does not exhibit either a consonant cluster or a high vowel, unlike candidates (c, d).

 Tableau 14: *reka* ‘river’, GENPL

Input: /rek/ + /a:a:/or /i:/ Listed allomorph: <i>rek</i>	LC	*HIATUS	MAX-SUFF&*CC	*[HIGH]	MAX-SUFF	*CC	*[LOW]
a) [reka:a:]		*!					**
b) [reki:]				*!			
□c) [reka:]					*		*

Tableau 14 is shown to explain why feminine nouns whose stem does not end with a consonant cluster do not select /i:/. Since \*[HIGH] dominates MAX-SUFF, it is better

not to have a front vowel in the output than to delete part of the suffix, and given that the stem /rek-/ does not contain a cluster, the complex constraint does not play any role.

As already mentioned, while there has been restructuring which has led to different acceptability of forms, the nouns of the type *tetka* still carry traces of the old system in the sense that their lexical entry still contains the allomorph *tetak* which is not computed by the current grammar. It is a simplification that all of these allomorphs are solely maintained by the existence of the GENPL form: in the specific case of *tetka*, there actually does exist a related noun which contains this same allomorph derived by epenthesis: *tetak* “uncle”. It is an empirical question which we leave to further research in what part of cases the maintenance of the allomorph is “sponsored” by related words.

### **5. Residual issues: the touchability of the untouchables**

Traditionally, SBC clusters consisting of a sibilant followed by a coronal stop (henceforth ST) are treated as single segments in all ways. Namely, they are never disrupted by wobbly *a* and the GENPL allomorph in feminine nouns always *-a*, just like in all stems which end in a single consonants. Such clusters are /st, zd, ft, ʒd/.

Cross-linguistically, ST clusters are the hardest to separate, forming the least separable extreme within the broader class of hardly separable SC clusters.

SC and ST clusters are therefore cut-off point of insertion in many cases. For instance, Dutch loanwords containing consonant clusters are adapted in Sinhalese inserting an epenthetic vowel between the two consonants, except in the case of SC clusters, where the vowel is in fact prosthetic, i.e., it precedes the sibilant (Boersma et al. 2000).

(9)

Dutch	Sinhalese	Gloss
<i>plan</i>	<i>pālāna</i>	‘plan’
<i>vrouw</i>	<i>porova</i>	‘queen (of cards)’
<i>stall</i>	<i>istallaya</i>	‘stall’

These loanword facts are explained by perceptual distance: SVC is a more salient departure from SC than VSC, whereas CVR is closer to CR than VCR (where V = any vowel, R = any sonorant, cf. Steriade 2001).

The homorganicity of S and T makes the cluster arguably even more

“unsplittable”. The additional unity of ST clusters is not surprising from a perceptual point of view either. These clusters are known to constitute a unique “perceptual bond”. As Olender (2013) points out, ST is different from other /s/+stop combinations because of its homorganicity. He cites the example of Smith’s study (1973) on his son Amahl, who was able to produce /st/ before other clusters.

In SBC there are many (both native and borrowed) nouns of the type shown in (10a), but none of them follows the pattern shown in (10b). Moreover, standard grammars only mention the feminine paradigms of the type shown (10c), whereas those of the type shown in (10d) are never registered.

	NOMSG	GENSG	NOMPL	GENPL
	Gloss			
(a)	<i>raspust</i> ‘vacation’	<i>raspusta</i>	<i>raspusti</i>	<i>raspusta</i>
(b)	*[ <i>raspusat</i>	<i>raspusta</i>	<i>raspusti</i>	<i>raspusata</i> ]
(c)	<i>cesta</i> ‘road’	<i>ceste</i>	<i>ceste</i>	<i>cesta</i>
(d)	<i>pasta</i> ‘pasta’	<i>paste</i>	<i>paste</i>	<i>pasti/?pasta</i>

However, there seem to be signs of massive reanalysis of ST sequences as actual clusters. First, for most recent loanwords the paradigms of the type shown in (10d) are common. Second, an experiment conducted by Simonović (2009) showed that speakers, when exposed to nonce forms of the type *natazad*, often create GENSG forms like *natazda*, so forming exactly the unattested paradigm illustrated in (10b). In other words, speakers are willing to accept the hypothesis that wobbly *a* can disrupt a ST sequence since they derive the nonce form *natazad* from underlying /natazd/, although this currently does not lead to any reanalysis in the treatment of the existing words, presumably due to LC.

### 5.1. The experiment

Participants. 50 SBC native speakers were enrolled in the experiment, of both genders.

Procedure. A list of nonce legal words, presented as rare existing words, were proposed to the participants in their (supposedly) NOMSG forms. Participants were

asked to produce other case forms of the paradigm.

Hypothesis. It was expected that a native speaker exposed to NOMSG forms ending with [-sat, -zad, -fat, -zad] would never construct underlying forms with /-st, -zd, -ʃt, -ʒd/ because such alternation is unattested in the native lexicon.

Results. Little less than half of the participants to the experiment, when exposed to NOMSG forms ending with a /SaT/ sequences, deleted *a*. For instance, the GENSG of *natazad*, *nališat*, *pugusat*, *nogožad* were produced as *natazda*, *nališta*, *pugusta*, *nogožda*.

This finding suggests that, by now, speakers do not represent ST clusters as special segments and treat them exactly like other clusters. The pattern described in (10a) is therefore the only one that surfaces not because it is the only one allowed by the grammar, but because it used to be that way and now the dynamics of the lexicon do not allow any items of the type (10b) to lexicalise.

Tableau 15: *raspust* ‘vacation’ NOMSG

Input: /raspust/ Listed allomorph: <i>raspust</i>	LC	MAX-STEM	*COMPLEX CODA	DEP	*[LOW]
□ a) [raspust]			*		*
b) [raspusat]	*!			*	**
c) [raspus]		*!			*
d) [raspu]		*!*			*

Tableau 15 shows that *raspust* does not allow wobbly *a* to emerge because LC blocks it. The fact that an allomorph such as *\*raspusat* has never been produced by the grammar is probably due to the perceptual unity of ST clusters discussed earlier, which Boersma et al. (2000) formalise with a DEP/S\_C constraint. However, for the purposes of the present-day SBC, it is the existence of the lexical item that suffices to ensure no new allomorphs are added, given the high ranking of LC. The same blocking mechanism applies to new loanwords (e.g. *kast* ‘cast’, *mast* ‘must’), since they enter the language with a single allomorph. As already mentioned, very recent loanwords are generally assigned to paradigms in which the stem has only one allomorph, as illustrated in (11). In English borrowings entered recently in the lexicon, consonant clusters are never disrupted. Neither *konstrejnt*

nor *impakt* display epenthetic or metathetic *a*. Forms like NOMSG *\*konstrejnat* or GENPL *\*impakata* are unattested.

(11)	NOMSG	GENSG	NOMPL	GENPL
	Gloss			
(a)	<i>konstrejnt</i> 'constraint'	<i>konstrejnta</i>	<i>konstrejnti</i>	<i>konstrejnta</i>
(b)	<i>impakt</i> 'impact'	<i>impakta</i>	<i>impakti</i>	<i>impakta</i>

In sum, LC and DEP(LOAN) are undominated in the ranking at the moment, new words will never introduce any new allomorphs. The status of a new word might depend on several factors, among which low frequency, recency in borrowing or, trivially, non-existence. The results of the experiment, in which native speakers allow ST clusters to be disrupted, can therefore be accounted for by the fact that nonce words are not listed in the lexicon of the speakers and therefore LC plays no role whatsoever, as shown in Tableau 16. However, unlike in borrowing, the speakers were led to believe that they were dealing with existing words, which were not introduced into the language to them, so that the whole concept of initial allomorph did not apply.

Tableau 16: NOMSG of nonce word *natazad*

Input: /natazd/ No listed allomorph	LEXCON	MAX-STEM	*COMPLEX CODA	DEP	*[LOW]
a) [natazd]			*!		**
□b) [natazad]				*	***
c) [nataz]		*!			**

In other words, the crucial aspect which is captured by Tableau 16 is that the speakers believe that they are guessing the forms of an existing word. A nonce word like *natazad* cannot be associated to existing allomorphs, so LC is vacuously satisfied. This explains the peculiar situation in a language which has undominated LC and DEP(LOAN), so that restructuring in representations will show only under very specific circumstances, such as guessing paradigms of nonce words and allowing the paradigms of the type (10d) for new items. This crucially means that, given the new restructurings, the paradigms of the type (10b) are perfectly

representable in SBC, but that, given the high ranking of LC and DEP(LOAN), there is no plausible scenario which would lead to such paradigms being lexicalised.

## **6. Conclusions and goals for further research**

The analysis of the zero:*a* alternation within SBC paradigms presented in this paper can be summarised in the following way.

(1) There are two different wobbly *a*'s in SBC. One is epenthetic and occurs only in forms with a null ending of nouns whose stem ends in a consonant cluster and it is enforced by the constraint that militates against complex codas. The other wobbly *a* is metathetic and surfaces only when the GENPL suffix /a:a:/ is applied. The metathesis is guided by a constraint which militates against hiatus, which also explains why metathesis only occurs in stems which end in a consonant cluster.

(2) There is massive underapplication of both types of wobbly *a*. While the underapplication of the epenthetic *a* is limited to loanwords, the metathetic *a* shows much inter-speaker variation, also in native items. We account for the first type of underapplication using a special type of Faithfulness indexed to loanwords (DEP(LOAN)), while the other type is due to Lexical Conservatism, the family of constraints which militates against the introduction of new allomorphs in the course of paradigm formation.

(3) Although the two wobbly *a*'s surface for different reasons, they introduce the same allomorph: the stems ending in /-CC/ get an allomorph ending in [-CaC]. As a consequence, in the only class which has both types of wobbly *a* in the same paradigm, the epenthetic *a* licenses the metathetic *a*, making both *a*'s ubiquitous in all native words of this class.

(4) In present-day SBC, the class of words which allow wobbly *a* acts like a closed class: new items never allow the introduction of the allomorph with a wobbly *a*. For this reason, we are proposing that in the current grammar, LC is undominated, so that all new paradigms will display a single allomorph in all forms. Under such a grammar, all the nouns which allow the metathetic *a* have a listed allomorph in their lexical entry.

(5) The traditionally unseparable ST clusters (which were originally treated as single segments) show different signs of reanalysis into regular clusters. This reanalysis influences the results of an experiment in which the speakers are asked to produce the forms of nonce words which were presented as infrequent SBC words. Under these circumstances, ST clusters are interrupted by wobbly *a* in a



sizable number of items. However, this type of paradigms, while perfectly possible, is very improbable to lexicalise, since all words enter SBC either as loanwords or as other type of neologism, always falling under the auspices of LC, which blocks the introduction of wobbly *a*.

Although the experimental results are based on a very limited number of items, it is an important finding that speakers produced paradigms which are not only unattested, but also seem impossible to lexicalise under the current circumstances. The crucial role of LC-guided lexicalisation in determining what is attested in SBC has important theoretical consequences. In other words, the standard OT concept of the Richness of the Base (which forces one to consider all the possible inputs to the grammar) does not suffice for languages with complex paradigmatic relations and has to be complemented with a theory of the grammar-lexicon interface.

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