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Serbo-Croatian Clitic Placement: An Argument for Prosodic Movement

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1 Introduction

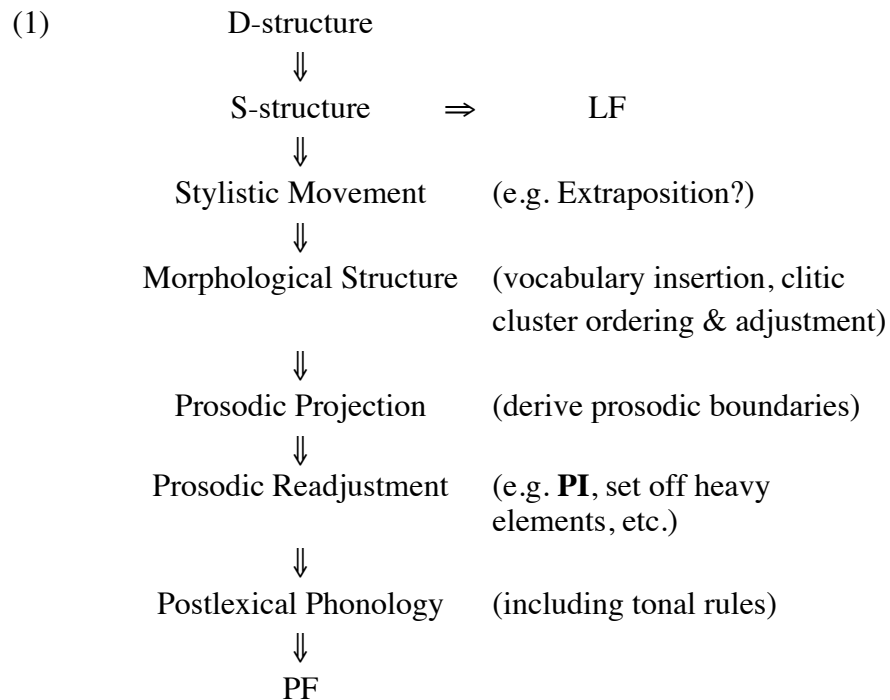
1.1 Theoretical overview

The analysis of Serbo-Croatian (SC) second position clitic placement has been the source of much controversy in generative linguistics. The most important points of disagreement among competing analyses have been the extent to which the various components of the grammar—syntax, morphology, phonology—are implicated in determining the position of the clitics, and the type of interaction among these components that is required. My aim in this talk is to argue for a specific class of solutions to these issues. In particular, I will show that the position of the clitic cluster in a clause cannot be completely determined by the syntax, although the syntax does have a crucial role to play. Rather, I will argue that the position of the clitic cluster is subject to purely phonological constraints that can not only filter out syntactically valid orderings but also trigger a re-ordering of morphemes that does not conform to the syntax. This analysis supports a strictly derivational theory in which syntax feeds phonology, with no “look-ahead” from one component to the next, where each component can affect the linear order of morphemes in a sentence subject to its own constraints.

More specifically, I will argue for the necessity of Halpern’s (1992) proposed operation of Prosodic Inversion (PI), which can re-order a clitic and a potential host word in order to satisfy the clitic’s need for a host to its left. In SC, this will allow enclitics that are clause-initial at S-structure to surface encliticized to the first prosodic word of the clause. I assume for concreteness that clitics are in Comp at S-structure, so that phrases that move to Spec-CP or heads that move to C⁰ are potential hosts for the clitics, but neither of these movements is obligatory. The S-structure tree is subject to a process of prosodic mapping that derives a hierarchical prosodic structure for the sentence from its syntactic struc-

ture. I claim that prosodic mapping must happen in two stages, the first a blind application of constituent-forming rules sensitive only to syntactic boundaries, the second a repair phase that modifies the output of the first based on prosodic requirements of the language. I claim that PI is part of this second stage, repairing sentences wherein clitics are unlicensed due to the lack of a host by performing the minimal change needed to license them, namely inverting the linear order of the clitic cluster and the following prosodic word.

My assumptions about the overall structure of the grammar and the ways in which the components interact are shown diagrammatically in (1).



1.2 Descriptive background

In contrast to the generally free ordering of clausal constituents, SC has a set of enclitics whose position in a sentence is fixed: they must appear in “second position,” not first (2) or later than second (3):

- (2) ***Je ga** dao Mariji.
 AUX it given Mary
 (‘He has given it to Mary.’)
- (3) *Ivan Marije **je ga** dao.
 Ivan Mary AUX it given
 (‘Ivan has given it to Mary.’) (Ćavar & Wilder 1993: 9)

Whenever more than one of these clitics occurs in a clause, they must be adjacent to one another. The order of clitics within the cluster is fixed for most dialects, as shown in the following template (Browne 1974):

(4)

<i>li</i>	AUX	DAT	ACC/GEN	<i>se</i>	<i>je</i>
Q (question particle)	auxiliaries (except <i>je</i>)	dative pronoun	accusative/ genitive pronoun	REFL (reflexive pronoun/ particle)	3sg AUX

The full set of pronominal and auxiliary clitics is given in (5).

(5)

a. Pronouns 1sg 2sg 3sg-m/n 3sg-f refl 1pl 2pl 3pl

Dative: mi ti mu joj si nam vam im

Genitive: me te ga je (se) nas vas ih

Accusative: me te ga je/ju (se) nas vas ih

b. Auxiliaries 1sg 2sg 3sg 1pl 2pl 3pl

Future ('will'): ću ćeš će ćemo ćete će

Conditional ('would'): bih bi bi bismo biste bi

Past/Copula ('AUX'): sam si (je) smo ste su

Traditional descriptions distinguish two sub-cases of second position placement: following the first word of a clause ("1W") versus following the first constituent ("1C"). (6a) illustrates the former, with clitics apparently interrupting the subject NP; (6b) shows them following this constituent; (6c) shows that the first constituent can be anything, including an adjunct. (6d and e) are parallel to (6a and b) except that the initial adverbial has been added, separated off by a pause (denoted by "l") from the rest of the clause and not affecting clitics, which can still come after the first word or first constituent of the clause proper, i.e. the subject. Thus, "second position" must apparently be defined not with respect to the entire sentence, but with respect to some notion of elements "internal" to the clause. This is confirmed by the facts in (7): clitics cannot follow the first word if it is in turn followed by a pause; the pause apparently demarcates the clause boundary in the relevant sense.

- (6) a. Taj **mi je** pesnik napisao knjigu.
that me AUX poet written book
'That poet wrote me a book.'
- b. Taj pesnik **mi je** napisao knjigu.
- c. Ove godine **mi je** taj pesnik napisao knjigu.
this year
'That poet wrote me a book this year.'

d. Ove godine | taj **mi je** pesnik napisao knjigu.

e. Ove godine | taj pesnik **mi je** napisao knjigu.

(Browne 1974: 41)

(7) a. Noću **je** ovdje mirnije.
at-night AUX here more-quiet
'At night it is more quiet here.'

b. *Noću | **je** ovdje mirnije.

c. Noću | ovdje **je** mirnije. (Radanović-Kocić 1988: 106)

Examples (8), (9) and (10) further illustrate the 1W/1C alternation. Despite various claims in the literature about preferences between the two placements, I assume both are made available by the grammar.

(8) a. Moja mlađja sestra **će** doći u utorak.
my younger sister will come on Tuesday
'My younger sister will come on Tuesday.'

b. Moja **će** mlađja sestra doći u utorak.

(9) a. Sovjetske goste **je** primio i predsjednik
Soviet guests AUX received also president
Republike Austrije Jonas.
republic Austria Jonas
'The President of the Republic of Austria, Mr. Jonas,
also received the Soviet guests.'

b. Sovjetske **je** goste primio i predsjednik Republike
Austrije Jonas.

(10) a. Prošle godine **su** otvorili ugostiteljsku školu.
last year AUX open hotel-and-catering school
'Last year they opened a hotel-and-catering school.'

b. Prošle **su** godine otvorili ugostiteljsku školu.

(Browne 1975: 113–114)

The element preceding the clitics can be a tensed main verb or a participle as well:

- (11) Dolazi **li** Marija?
comes Q Mary
'Is Mary coming?' (Progovac 1993: 18)
- (12) Pripremila **sam si ga** za sutra.
prepared AUX REFL it for tomorrow
'I made it ready (for myself) for tomorrow.'
(Mišeska Tomić 1993: 4)

Considering now the 1W option in more detail, it turns out that not just any word can precede clitics sentence-initially: most prepositions cannot (13b), nor can the verbal negation marker (14b) or certain conjunctions (15b).

- (13) a. Na sto **ga** ostavi.
on table it leave
'Leave it on the table.'
- b. *Na **ga** sto ostavi. (Progovac 1993: 4)
- (14) a. Ne vidim **ih**.
not see them
'I don't see them.'
- b. *Ne **ih** vidim. (Browne 1975: 112)
- (15) a. ...i ne gledaju **me**.
and not look me
'...and don't look at me.'
- b. *...i **me** ne gledaju. (Browne 1975: 113)

The relevant generalization seems to be that the host element to the left of the clitics must be a prosodic word, rather than just any syntactic terminal; proclitic and enclitic cannot combine to form a prosodic word. By prosodic word (PWd) is meant a phonologically independent word, i.e. not a clitic; the set of prosodic words is often characterized by the ability to bear accent, although this latter criterion is highly problematic. There is independent evidence that

most prepositions in SC are proclitics, as is *ne*, and most likely *i* as well. Thus the explanation for the clitic as the fourth syntactic element in (15a) is that *i* and *ne* are both proclitic on *gledaju*, the first PWd in the clause, and *me* is in 1W position because it is enclitic on that PWd.

As a result of the possibility that clitics can follow the first PWd of a sentence, clitics may break up a constituent into pieces that are not themselves syntactic constituents, as with the PP in (16), where *na veoma* is presumably not a constituent, but it is a single PWd.

- (16) Na veoma **si** **se** lepom mestu smestio.
 on very AUX REFL nice place placed
 ‘You’ve placed yourself in a very nice place.’
 (Mišeska Tomić 1993: 6)

I will use examples like this to argue that syntactic movement is insufficient for clitic placement, and PI is necessary.

In section 2 I will summarize the major analyses of SC clitic placement in the literature. This will motivate the detailed argument for prosodic movement in section 3. The next two sections of the paper are devoted to analyzing instances where the standard pattern of 1W/1C does not hold, which I claim are more readily explainable with an analysis that includes PI. Section 4 covers cases of obligatory 1W placement, i.e. the impossibility of 1C in certain constructions. Section 5 looks at the opposite problem, instances of obligatory 1C where 1W is blocked. Finally, section 6 presents some broader theoretical implications of the analysis and conclusions.

2 Previous Analyses

For my purposes, it is useful to divide the major accounts of SC clitic placement in the literature into three classes.

2.1 Pure phonology accounts

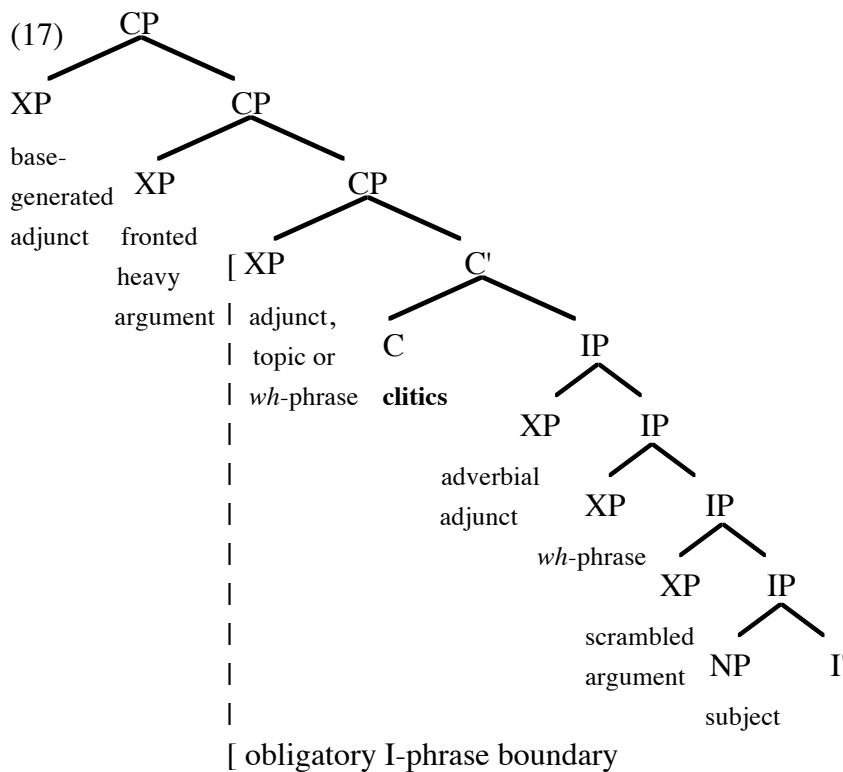
Accounts of this type include those by Radanović-Kocić (1988, 1993) and Hock (1992, 1993). For reasons of space I will not discuss these because they have little in common with my proposal

and have not been elaborated to deal with the full range of data I wish to consider.

2.2 Pure syntax accounts

By a pure syntax account of SC clitic placement I mean an account under which the syntax is fully responsible for the linear position of clitics in the sentence string, i.e. clitics do not move in the phonology.

The most detailed pure syntax accounts I have seen are those of Progovac (1993, 1994) and Ćavar and Wilder (1992, 1993; Wilder & Ćavar 1993). I adopt essentially their syntactic assumptions. (17) shows the schematic structure for the top of SC clauses that I will assume for concreteness in the rest of this paper (order among adjoined elements may be free):



Their explanation for the 1W/1C alternations like (18) is based on noticing that in most of these cases, one can show independently that the first word is extractable and questionable independent of the presence of clitics, as in (19) and (20).

- (18) a. [Anina drugarica] **mu** nudi čokoladu.
 Ana's girl-friend him offers chocolate
 'Ana's friend is offering him chocolate.'
- b. [Anina] **mu** drugarica nudi čokoladu.
- (19) Anina dolazi sestra.
 Ana's comes sister
 'Ana's sister is coming.'
- (20) Čija dolazi sestra?
 whose comes sister
 'Whose sister is coming?' (Progovac 1993: 3)

Thus, the claim is that whatever is responsible for the word order in (19) is also responsible for 1W clitics intervening in the NP in (18b): presumably, *Anina* has extracted from the subject NP and fronted. Conversely, prepositions generally cannot host clitics, and they also cannot be extracted from their PPs, so this restriction is captured without appealing to the status of prepositions as proclitics. I accept their extraction account for the cases they discuss, but I argue that there are instances of 1W that cannot be analyzed in this way. They claim that some element must always move to Spec-CP or to Comp when clitics are present, but I claim it is possible for neither movement to happen, since I believe that clitics can lack a host at S-structure.

2.3 Mixed accounts

By a mixed account of SC clitic placement I mean one under which both syntax and phonology play an active role in the eventual linear position of clitics.

Halpern (1992) proposes a mixed account (refined by Percus 1993) that forms the basis of my own. His fundamental claim is this: phonology can move clitics if and only if their prosodic requirements are not satisfied, and it can move them only the mini-

mal distance necessary to satisfy those requirements (cf. Sproat 1988, Marantz 1988, 1989, Sadock 1991, Percus 1993, and others). Halpern dubs the process responsible for this movement Prosodic Inversion (PI), since it inverts the order of a clitic and its host prosodic word. This approach makes the following correct predictions about SC, as he notes. 1) The entire set of second position clitics shows the 1C/1W alternation—there are no idiosyncratic differences among them; it is not obvious that this would follow from a pure phonology approach. 2) In a given sentence, the clitic cluster cannot be split between 1C and 1W positions, and there is no “doubling” of the same clitic in both positions. These predictions follow from the fact that clitics have a unique syntactic position and PI, when applicable, is not optional. 3) There is no allomorphy sensitive to the 1C/1W distinction, since at the point when clitic morphemes are inserted PI has not applied.

Halpern’s particular construal is that PI is a last-resort option for saving otherwise ill-formed structures, i.e. “The surface order of two lexical items reflects the order established by the syntax unless this would lead to an ill-formed surface (prosodic) representation” (p. 23). It is the “result of the mapping between syntactic and prosodic structure; its scope is limited to affecting adjacent elements, and its application makes reference only to prosodic constituency” (p. 2). Thus, clitics can move only the minimum distance required for them to have a valid host, namely one prosodic word; this restriction need not be stated on a rule, but rather is a general property of the phonology. He provides the following formulation, which I adopt verbatim (“ ω ” denotes a phonological word):

- (21) Prosodic adjunction of clitics: For a DCL [directional clitic], X, which must attach to a ω to its left,
- a. if there is a ω , Y, comprised of material which is syntactically immediately to the left of X, then adjoin X to the right of Y.
 - b. else attach X to the righedge of the ω composed of syntactic material immediately to its right. (Halpern 1992: 81)

(22) Sample applications of rules (21a and b) to sentences in (18):

- | <i>S-structure</i> | <i>PF</i> |
|---|-----------|
| a. [Anina] _ω [drugarica] _ω mu ⇒ [Anina] _ω [[drugarica] _ω mu] _ω
Ana's girl-friend him | |
| b. Mu [Anina] _ω [drugarica] _ω ⇒ [[Anina] _ω mu] _ω [drugarica] _ω
(Prosodic Inversion) | |

His explanation for clitics later than absolute second position (e.g. (6d and e)) is as follows: “A constituent which is stylistically fronted is separated from the rest of a clause by a (large) prosodic boundary—that is, the fronted constituent is in a separate intonational phrase” (p. 91), the left edge of CP in (17); “A clitic must be contained in the same intonational phrase as its host” (p. 152–153). The latter is a constraint on the prosodic adjunction rule, blocking clause (21a) in some cases, thus triggering clause (21b).

An immediate consequence is that any clitic placement that is not derivable purely in syntactic terms must involve rightward movement over exactly one prosodic word in the phonology.

3 An Argument for Prosodic Movement

I will now argue that phonological re-ordering is crucially required in a full analysis of SC clitic placement, as argued by Halpern and Percus and contra the claims of Progovac, Čavar and Wilder, etc.

Conceptually, the form of the argument is very simple: the claim is that there are certain clitic placements that are not derivable by the syntax at all, because the string preceding the clitics cannot undergo syntactic movement, but these placements are derivable by phonological movement, since they involve clitics being exactly one PWd from the beginning of a constituent. The details are complex, due to the abundant extraction possibilities afforded by SC. The origins of this argument are in Percus 1993.

The crucial constructions involve sentence-initial PPs that contain prenominal modifiers in the NP object of P, where the preposition is a proclitic, as in (23) and (24).

- (23) U veliku **je** Jovan ušao sobu.
 in big AUX Jovan entered room
 ‘Jovan entered (the) big room.’
- (24) U ovoj **je** sobi klavir.
 in this AUX room piano
 ‘In this room is the piano.’ (Percus 1993: 2)

If PI is truly part of SC grammar, then we expect to find clitics following the first modifier, since it forms a single PWd together with the procliticized preposition, and this is indeed what we find. The question is whether there is an alternative, pure syntax account of this clitic placement.

Now it is certainly true that prepositional phrases in SC can be interrupted by other material, as in (25).

- (25) U veliku Jovan ulazi sobu.
 in big Jovan enters room
 ‘Jovan enters (the) big room.’ (Percus 1993: 2)

Thus, independently of the clitic facts we need a syntactic way to derive this sentence, i.e. to split *u veliku* from *sobu*. There are in principle two ways of doing this: either by fronting the non-constituent *u veliku* and stranding *sobu*, or by extracting *sobu* first, then moving *u veliku*. The latter gains empirical support from the fact that head nouns can be independently shown to extract from their NPs:

- (26) Studentkinje dodjoše sve njegove.
 students came all his
 ‘All of his students came.’ (Mišeska Tomić 1993: 52)

While the precise nature of this movement remains obscure, I suggest that it is an instance of XP-movement rather than head movement, where the XP in question might be the NP complement of DP, given a suitably articulated DP structure. From the facts at hand, we cannot determine whether this movement is leftward or rightward, since the remnant constituent itself appears to front after NP extraction.

Thus, if all we had were sentences like (23) and (24), there would be at least one palatable syntactic approach to derive the clitic placement. However, NPs can have multiple modifiers preceding the head noun, and when they do, we find a contrast between clitics and other material regarding where the PP can be split. Specifically, clitics can always appear after the first modifier ((23), (24), (27), (28)), that is after the first PWd, but nonclitics can appear only after the last modifier, that is, immediately preceding the head noun ((23) and (29a) versus (29b and c)).

- (27) U ovu **je** veliku sobu Jovan ušao.
 in this AUX big room Jovan entered
 ‘Jovan entered this big room.’
- (28) a. U velikoj **je** sobi klavir.
 in big AUX room piano
 ‘In the big room is the piano.’
- b. U ovoj **je** velikoj sobi klavir.
 this
- (29) a. ??U ovu veliku Jovan ulazi sobu.
 in this big Jovan enters room
- b. *U ovu Jovan ulazi veliku sobu.
- c. ???U ovu Jovan veliku ulazi sobu.
- d. ?U ovu **je** veliku Jovan ušao sobu.
 (Željko Bošković: p.c.; Ljiljana Progovac: p.c.)

Note that (29c) splits the PP twice and is pretty bad; my account predicts that splitting the PP twice with a clitic as the first separator is good, which is true (29d). (Although my principal consultant firmly attests to the distinctions in grammaticality as indicated, what is crucial for my argument is merely that (29a and d) are better than (29b and c).)

Under a theory that includes PI, these facts are exactly what we expect: PI can move clitics to their position following the first PWd when they would otherwise lack a host sentence-initially, but

any other interruption of a PP must be syntactically derived, and the only way the syntax can split a PP is by extracting the NP from its DP complement. In cases with a single modifier, we cannot tell whether syntactic or prosodic movement is involved since they yield the same result, but with multiple modifiers we see a difference. Thus, the prosodic movement account is strongly supported.

In contrast, I claim there is no reasonable analysis of these facts under a pure syntax approach. Given that clitics contrast with non-clitics in their placement options, a pure syntax approach must posit two different kinds of syntactic movement for the two cases and explain why they correlate with different kinds of intervening material. In particular, it is necessary to block nonclitics after an extraction that moves a P+modifier sequence to the left. Getting this contrast requires an arbitrary stipulation under any pure syntax account of the PP paradigm, because of the basic descriptive fact that clitics go where nothing else can: to accomplish this in syntax requires a type of movement for which there can in principle be no independent motivation.

Note that one could not even say that it is the first subconstituent of the NP that can move, taking the preposition along by some sort of prosodic “pied piping.” It is really only the first word that can split off: an Adjective Phrase containing an adjective and a modifier cannot host clitics when more modifiers follow it (30c); again (30a and b) involve NP extraction, followed by fronting of the remnants of the DP:

- (30) a. Izuzetno veliku **je** Jovan učinio uslugu Petru.
 extremely big AUX Jovan did favor to-Peter
- b. U izuzetno veliku **je** Jovan ušao sobu.
 in extremely big AUX Jovan entered room
- c. *U izuzetno veliku **je** Jovan ušao praznu sobu.
 empty
 (Željko Bošković: p. c.)

This makes the process look even more like a PWD-based one and even less syntactic: why should a modified adjective have different extraction properties from an unmodified one?

It ought to be possible to construct the same kind of argument based on other constructions in SC as well. I have come across two paradigms that might serve as a starting point:

The first involves a modified predicate adjective phrase: (31a vs. b) show that only clitics can intervene between the adverb and the adjective, which is expected if *vrlo* cannot extract. If it is replaced with a *wh*-word that *can* extract, other material can more easily intervene: (32b), (33).

(31) a. Vrlo **je** visoka Bojanova sestra.
very AUX tall Bojan's sister

b. ???Vrlo **je** Bojanova sestra visoka.

(32) a. Koliko tvrdis da **je** visoka Bojanova sestra?
how.much claim that AUX tall Bojan's sister
'How tall do you claim that Bojan's sister is?'

b. ??Koliko tvrdis da **je** Bojanova sestra visoka?

(33) ??Koliko **je** Bojanova sestra visoka?
(Željko Bošković: p.c.)

The second involves conjoined NPs with pre-nominal modifiers:

(34) a. Tvoja **su ti ga** mama i tvoja sestra kupile.
your AUX you it mom and your sister bought
'It was your mother and your sister that bought it for you.'

b. *Tvoja mama **su ti ga** i tvoja sestra kupile.
(Mišeska Tomić 1993: 51–52)

Unfortunately, one of my consultants finds (34a) completely bad, but if some speakers get a contrast here it could constitute another instance of the same type of argument.

4 Analysis of obligatory 1W placement

In this section and the next I analyze constructions that do not follow the usual 1C/1W clitic placement alternations. In this section the focus is on predicative constructions, which have been claimed to disallow 1C placement and require 1W placement. Here are Browne's description and examples (also cf. Bennett 1987):

If a clause begins with a verb, or with a form of 'to be' plus a predicate (predicate noun, predicate adjective, participle, adverb, prepositional phrase), the enclitics come after the first word. Here the alternative of putting them after a whole phrase is not open...In this position when an adjective modifies a noun, or an adverb modifies an adjective, the two together form a phrase, and the enclitics, again, must come after the first word of the phrase. (Browne 1975: 118)

- (35) a. Odličan **je** student.
 excellent AUX student
 'He is an excellent student.'
- b. *Odličan student **je**.
- (36) a. Jako **si mi** dosadan.
 very AUX me boring
 'You're very boring (to me).'
- b. *Jako dosadan **si mi**.
- (37) a. Jako **mi je** dosadna njegova posljednja knjiga.
 very me AUX boring his last book
 'His last book is very boring (to me).'
- b. *Jako dosadna **mi je** njegova posljednja knjiga.
- (38) a. U drugoj **su** sobi.
 in other AUX room
 'They're in the other room.'
- b. *U drugoj sobi **su**. (Browne 1975: 118)

Why should multi-word copular predicate phrases not be able to be followed by clitics? Some of these are bad because clitic-final sentences are often bad (almost always bad unless the sentence contains only one PWd), but since (37b) does not end in a clitic and is still bad, I will assume that Browne's generalization is correct over and above that. Under my theory, we have to say that the adjective phrase in (37) cannot front ahead of the clitics in the syntax; in particular, it cannot front to Spec-CP. If the Adjective Phrase always follows the clitics syntactically, perhaps sitting in a Focus position between Comp and IP, the clitics must move rightward in the phonology to derive a valid sentence, and since I have claimed that they never move more than one PWd in the phonology, the ungrammaticality of (37b) would be explained. Of course, it remains to be argued why fronting of *predicate* AP to Spec-CP is impossible, but it seems plausible to suggest an explanation related to that position's function as Topic: in a copular sentence, the predicate is typically new information, and thus incompatible with Topic position, which houses given information. A pure syntax account would be hard-pressed to explain why *part* of a copular predicate can front but the whole predicate cannot.

5 Analysis of “fortresses” (obligatory 1C placement)

It has been known at least since the work of Browne (1974, 1975) that some 1W placements are not as good as others. Specifically, there is a class of NPs that seem to resist 1W clitic placement within them when clause-initial, in the sense that there is much dialectal and/or inter-speaker variation regarding how good they are (Halpern 1992, Zec 1987, Radanović-Kocić 1988), they may be worse with multiple clitics interrupting them than with a single clitic (Progovac 1993), they are claimed to be much more common in written than in spoken language and in earlier rather than current-day usage (Browne 1975), etc. I annotate such sentences with “%*”. I shall follow Halpern in lumping these constructions together under the rubric of “fortresses” (they resist invasion by clitics) and searching for something that they have in common that distinguishes them from uncontroversially good cases of 1W placement.

The set of fortress NPs can be catalogued as follows: multi-word proper names (39), conjoined NPs (40), post-head genitives (41), and post-head PPs (42). In all cases, the variant with the clitic following the entire initial NP is fine.

- (39) %*Lav **je** Tolstoj veliki ruski pisac.
Leo AUX Tolstoy great Russian writer
'Leo Tolstoy is a great Russian writer.'
- (40) %*Sestra **će** i njen muž doći u utorak.
sister will and her husband come in Tuesday
'My sister and her husband will come on Tuesday.'
- (41) %*Prijatelji **su** moje sestre upravo stigli.
friends have my-GEN sister-GEN just arrived
'My sister's friends have just arrived.'
- (42) %*Studenti **su** iz Beograda upravo stigli.
students AUX from Beograd just arrived
'Students from Beograd have just arrived.'
- (Halpern 1992: 94–95)

Progovac (1993) suggests a pure syntax account of these constructions. Under such an account, clitics can only appear within an NP if the part that precedes them is syntactically extractable. Thus, she claims this fails to be the case in (39)–(42): at least according to her intuitions, none of these elements independently allows extraction. The data for one of the fortress types is given in (43).

- (43) a. [Roditelji uspešnih studenata] **su se**
parents successful-GEN students-GEN AUX REFL
razišli.
dispersed
'The parents of the successful students dispersed.'
- b. *Roditelji **su se** uspešnih studenata razišli.
- c. ?*Roditelji **su se** razišli uspešnih studenata.
- d. *Ko **su se** uspešnih studenata razišli?
who (Progovac 1993: 5–6)

For speakers for whom some of (39)–(42) are fine, the corresponding extractions are also fine, as far as I know.

Syntactic inextractability is insufficient under a mixed syntax-phonology approach like my own, however, since PI should be able to put clitics in these places even if no syntactic separation is possible. Extractability could be the reason why people who allow clitics in fortresses do so, but we must still explain what blocks them for those who do not allow them. Therefore, Halpern attempts to account for the degraded nature of these sentences prosodically. Specifically, it would have to be that these constructions have a different prosodic structure from good cases of interrupted constituents, and that this difference blocks the operation of PI or subsequent cliticization. We want a constraint that rules out the structures in (39)–(42), and rules in clear cases of PI, discussed in sections 3 and 4.

Halpern proposes the phrasing principle in (44):

- (44) The left edge of the head of a branching constituent corresponds to the left edge of a prosodic [phonological] phrase. (Halpern 1992: 96)

plus the constraint that PI cannot cross a phonological-phrase boundary. Thus, in (41), *prijateljji* is the head of an NP that branches, since it contains a following genitive NP, so the left edge of this word initiates a phonological-phrase, as shown in (45), where ϕ denotes a phonological phrase. A clitic that originates in Comp, to the left of this NP at S-structure, would then be outside that phonological-phrase after prosodic mapping, and PI would require it to cross that phrase edge if it were to invert with and cliticize to *prijateljji*, which Halpern disallows. In contrast, a good case of 1W placement such as (46) has the ϕ -boundary later, as shown in (47), so PI can apply without crossing it.

- (45) Output of Prosodic Projection for sentence (41):
 ([ϕ = phonological phrase boundary])

su [ϕ *prijateljji* *moje* [ϕ *sestre* *upgravo* *stigli*
 AUX friends my-GEN sister-GEN just arrived

(*Prosodic Inversion blocked, sentence starred*)

(46) Moja **je** sestra stigla.
 my AUX sister arrived
 ‘My sister arrived.’

(47) Output of Prosodic Projection for sentence (46):

a. **je** moja [_φ sestra stigala

(*Prosodic Inversion allowed:*)

Output of Prosodic Readjustment:

b. [[Moja]_ω **je**]_ω [_φ sestra stigala

Halpern’s idea suffers from numerous problems. For one thing, examples like (46) are derivable without PI anyway, so this example is actually irrelevant to the proposed constraint. It is also not at all clear that his proposal will extend to cover the various other types of fortresses while allowing cases like (27) (a PP with modifiers) and (37a) (a predicative AP) above, and there are other problems. Nonetheless, I believe that something along these lines is right.

A possible generalization is that PI cannot move clitics across the head noun of an NP, regardless of branching. This would at least unite (40)–(42); something special would have to be said about proper names like (39).

To the extent that we can find a natural prosodic constraint on PI, this supports the mixed approach to clitic placement if an alternative syntactic constraint would be unappealing or unstatable. One intriguing fact that supports this reasoning is the following, noted by Percus (1993): postnominal PP fortresses become better when the PP portion is made heavier—compare (48) with (42) above.

(48) Studenti **su** iz prelepog grada na moru upravo stigli.
 students AUX from beautiful town on sea just arrived
 ‘The students from the beautiful town by the sea have
 already arrived.’ (Percus 1993: 24)

Percus claims that the length of the PP forces a phrasal stress to be placed on *studenti* that is not required in (42), perhaps a sign that *studenti* is phrased separately from the PP in (48) but not in (42), an idea that is corroborated by the fact that (42) improves if a pause is inserted after *studenti*. Getting these facts, if they turn out to be fully general across fortress types, evidently requires a more complex constraint on PI than the ones I have considered. Perhaps the first noun of the NP likes to phrase with following material, but cannot do so if that material is set off due to heaviness. This in turn could be because phonological phrases prefer to be binary branching (Dresher 1994). Whatever the explanation, the fact that the crucial contrasts come from presumably identical structures that differ only in heaviness or pause strongly supports the idea that the constraint must be a prosodically-based one.

6 Conclusions

In conclusion, Halpern's (1992) framework for the treatment of clitic placement receives considerable support. I have shown that his proposals can be extended to cover a substantially wider range of facts in SC than he or others have discussed.

The notion that clitics can be re-ordered with respect to an adjacent word in the way proposed by Halpern is key to understanding constraints on clitic placement. We have seen considerable evidence that this is a phonological process. (One would obviously like to study other instances of prosodic movement to see what generalizations can be made about it.) An important implication of this study bears on the nature of the phonology-syntax interface more generally. The facts of SC were used by Zec and Inkelas (1990) to support their view of this interface as a co-present, non-derivational one. I have shown that the facts do not warrant this type of model: we can explain the 1W/1C alternations in a purely derivational model wherein the syntax has no access to phonological information, and the phonology has only a constrained form of access to the output of the syntactic component.

Serbo-Croatian second position clitic placement is evidently a very complex phenomenon involving sometimes opaque interac-

tions among several modules of the grammar. In this paper I have striven to clarify the role that the phonology plays in this system.

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