The placement of enclitics in Bosnian, Croatian and Serbian[1]

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ABSTRACT

This paper proposes a prosodic account of alternating 'second position' enclitic placement in Bosnian, Croatian and Serbian. In these languages enclitics are usually described as following either a) the first syntactic phrasal constituent in the clause, or b) the first prosodic word (PRWD) in the clause. I propose that enclitic placement is best characterized as a) attachment to the first phonological phrase (PHONP) within the intonational phrase (INTP), or b) attachment to the first PRWD within INTP. In doing so I build upon the phrasal affixation approach to cliticization of Anderson (1996, 2000).

1. INTRODUCTION

This paper addresses the placement of 'second position' enclitics in Bosnian, Croatian and Serbian (henceforth BCS). Cross-linguistically second position clitics are constrained to follow an element which occupies initial clausal position. For some languages the initial element is most often defined as the first phrasal constituent of the clause. For others the initial element is usually referred to as either the first word or first prosodic word (PRWD) in the clause. In BCS, however, both placements are possible as in example (1).[2]

(1)	(a)	Taj	čovek	=je	čitao	knjigu.
		that	man	AUX.3.SG.PRES	read.PASTP.M.SG	book
	(b)	Taj	=je	čovek	čitao	knjigu.
		that	AUX.3.SG.PRES	man	read.PASTP.M.SG	book
		'That man read a book.'				

The literature contains two approaches to BCS second position clitic placement. The most common is based on syntactic movement of clitics to their surface (i.e. second) position. The second approach sees clitics not as syntactic terminal elements but as phrasal affixes with properties similar to word-level affixes. Anderson (1992, 1993, 1996, 2000) is such an account. This paper follows the phrasal affixation approach to clitics but incorporates a means by which the prosodic characteristics of clitics contribute to their second position placement and to the alternation in the type of element in first position. In particular, I propose that clitics attach either to the initial phonological phrase (PHONP) in their intonational phrase (INTP), as in (1a), or to the initial PRWD in their INTP, as in (1b).

The paper is organized as follows. Section 2 is an overview of BCS second position enclitics and their morphosyntactic and prosodic properties. Section 3 reviews some recent movement-based approaches to clitic placement in BCS including their associated problems. Section 4 draws on work by Radanović-Kocić (1988, 1996) – on INTP as the domain of cliticization – and Selkirk (1995) – on the prosodization of clitics/function words – to present a proposal for incorporating the prosodic characteristics of clitics into the phrasal affixation approach to cliticization. Section 5 contains some concluding remarks.

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[2] Clitics in the examples are underlined and their direction of cliticization is indicated by '='. Full glosses are given for all clitics and associated verb forms. Abbreviations used are: 1/2/3 – 1st/2nd/3rd person; ACC – accusative; AUX – auxiliary; COMP – complementizer; DAT – dative; F – feminine; GEN – genitive; M – masculine; N – neuter; NOM – nominative; PASTP – past participle; PF – perfective; PL – plural; PRES – present; PRN – pronominal; Q – interrogative particle; REFL – reflexive; SG – singular.

2. DESCRIPTION OF BCS SECOND POSITION ENCLITICS

2.1 *The enclitic inventory*

The BCS enclitic inventory contains pronominals, auxiliaries and a "yes/no" interrogative marker, *li*. The pronominal clitics are given in (2) and the auxiliary clitics in (3).

(2) Pronominal clitics

	Sg.				Pl.			Refl.
	1	2	3		1	2	3	
			M/N	F				
DAT	mi	ti	mu	joj	nam	vam	im	—
ACC/GEN	me	te	ga	je/ju	nas	vas	ih	se

Table (2) shows that the same forms serve as accusative and genitive pronominal clitics, while there is a different set for the dative. Each set includes separate forms for each person-number combination (except the reflexive), while the third person singular forms are further distinguished between feminine gender (*joj* and *je*/*ju*) on one hand and masculine and neuter genders (*mu* and *ga*) on the other. There is one reflexive form, *se*, which covers all persons, numbers and genders in the accusative and genitive, but there is no dative reflexive clitic.

(3) Auxiliary clitics

	Sg.			Pl.		
	1	2	3	1	2	3
PAST AUXILIARY	sam	si	je	smo	ste	su
CONDITIONAL AUXILIARY	bih	bi	bi	bismo	biste	bi
FUTURE AUXILIARY	ću	ćeš	će	ćemo	ćete	će

There are three sets of auxiliary clitics as illustrated in table (3). These are the present tense of *biti*, 'to be', used in the past form of verbs; the past tense of *biti*, used in the conditional form; and the present tense of *hteti*, 'to want', used in the future form. Like the pronominal clitics there are separate forms for each person-number combination, but there is no gender distinction in the third person singular forms. Examples of various enclitics are given in section 2.2 which considers their morphosyntactic characteristics. This is followed in section 2.3 by a discussion of the prosodic characteristics of BCS enclitics and the prosodic structure of BCS in general.

2.2 *The morphosyntactic characteristics of BCS enclitics*

This paper focuses on the second position placement of BCS enclitics which is illustrated in (4) for *je*, the third person singular of the past auxiliary.

(4) (a) Jovan =je voleo Mariju.
Jovan.NOM AUX.3.SG.PRES love.PASTP.M.SG Marija.ACC
'Jovan loved Marija.'
(b) Jovan =je Mariju voleo.
(c) Voleo =je Mariju Jovan.
(d) Voleo =je Jovan Mariju.
(e) Mariju =je Jovan voleo.
(f) Mariju =je voleo Jovan.
(g) * Je= Jovan voleo Mariju.
(h) * Voleo Mariju =je Jovan.
(i) * Mariju Jovan voleo =je.

Although basic word order in BCS is SVO, scrambling, giving focus and topicalization effects, means that many word orders are permissible. Despite this fluid word order, enclitics, if present, strictly occupy second position, hence the grammatical (4a-f) and the ungrammatical (4g-i).

However, there is variation in what type of element can occupy first position, as shown in example (5).

(5) (a) [Taj čovek]$_{NP}$ =je voleo Mariju.
that man AUX.3.SG.PRES love.PASTP.M.SG Marija.
(b) [Taj]$_{PRWD}$ =je čovek voleo Mariju.
that AUX.3.SG.PRES man love.PASTP.M.SG Marija.
'That man loved Marija.'

This alternation has traditionally been accounted for by describing BCS second position clitics as cliticizing to either the first phrasal constituent as in (5a), or the first word of that constituent as in (5b) (e.g. Browne 1993: 346).[3] The latter placement is also often characterized as cliticization to the first prosodic word (PRWD) (e.g. Anderson 1993: 203). In section 4.2 I present an account which relates both placements to prosodic structure, but for now I continue to refer to placement following the first phrasal constituent and following the first PRWD.

The strict second position placement of BCS enclitics contrasts with placement of their non-clitic 'full form' equivalents which are free to occur in

[3] If clitics follow the first phrasal constituent, as in (5a), the fact that they never follow a verb plus complement sequence, as in (4h), suggests that such a sequence is not phrasal, raising the possibility that BCS could be analyzed as lacking a VP constituent.

the same positions as other non-clitics, such as full NPs and non-clitic auxiliaries. Zwicky (1977) introduced the term 'special clitic' to describe clitics such as BCS auxiliaries and pronominals which are in complementary distribution with full forms.[4] Full forms occur in stressed contexts such as focus and contrast, as in (6) and (7), and in contexts where a phonological host is lacking such as initial position and following prepositions and conjunctions, as in (8)-(10).[5]

(6) Ja **jesam**/*=sam student.
I AUX.1.SG.PRES student
'I AM a student.'

(7) Daj to **njoj**/*=joj ne **njemu**/*=mu.
give it PRN.3.SG.F.DAT not PRN.3.SG.M.DAT
'Give it to her not to him.'

(8) Kome =si dao knjigu?
who AUX.2.SG.PRES give.PASTP.M.SG book
Njemu/*=Mu.
PRN.3.SG.M.DAT
'Who did you give the book to? To him.'

(9) Idiod **mene**/*=me.
go from PRN.1.SG.ACC
'Go away.'

(10) Pišem **tebi**/*=ti i **njemu**/*=mu.
write.1.SG.PRES PRN.2.SG.DAT and PRN.3.SG.M.DAT
'I am writing to you and him.'

(Radanović-Kocić 1996: 430)

Another characteristic of BCS second position clitics is their rigid ordering within clusters given in (11), adapted from Zec (1985: 364), and exemplified in (12)-(14) from Spencer (1991: 354).[6]

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[4] The interrogative clitic, *li*, has no full form equivalent but nevertheless exhibits other clitic characteristics such as the requirement for a phonological host, and restriction to a particular position. Zwicky (1977) labels such elements as 'bound words'.

[5] For example (10), it is not possible to co-ordinate a clitic and a non-clitic ruling out (i) even though *ti* has a legitimate host.

(i) *Pišem =ti i njemu.
write.1.SG.PRES PRN.2.SG.DAT and PRN.3.SG.M.DAT

[6] In example (14) the 2.PL.PRES form of the auxiliary, *jeste*, is not a clitic.

(11) Clitic ordering within clusters
li – AUX (except *je*) – DAT – ACC, GEN (except *se*) – *je*, *se*

(12) (a) U sali =smo =im =se
in hall AUX.1.PL.PRES PRN.3.PL.DAT REFL.ACC
predstavili.
introduce.PASTP.M.PL
'In the hall we introduced ourselves to them.'
(b) * U sali =im =smo =se predstavili.
(c) * U sali =im =se =smo predstavili.
(d) * U sali =smo =se =im predstavili.

(13) (a) Jovan =mi =ih =je
Jovan PRN.1.SG.DAT PRN.3.PL.ACC AUX.3.SG.PRES
dao.
give.PASTP.M.SG
'Jovan gave them to me.'
(b) * Jovan =je =mi =ih dao.
(c) * Jovan =mi =je =ih dao.
(d) * Jovan =ih =mi =je dao.

(14) (a) Jeste =li =joj =se
AUX.2.PL.PRES Q PRN.3.SG.F.DAT REFL.ACC
predstavili u sali?
introduce.PASTP.M.SG in hall
'Did you introduce yourselves to her in the hall?'
(b) * Jeste =joj =li =se predstavili u sali?
(c) * Jeste =joj =se =li predstavili u sali?

Thus it is ungrammatical for *je* to precede other clitics as in (13b, c); for other auxiliaries to follow pronominal clitics as in (12b, c); for accusative clitics to precede dative clitics as in (12d) and (13d); and for *li* to be in any position other than first in the cluster as in (14b, c).

2.3 *Prosodic characteristics of enclitics and prosodic structure of BCS*

The most notable prosodic characteristics of BCS second position enclitics are lack of pitch accent and stress, and a requirement for a phonological host. Here I briefly discuss these characteristics and BCS prosodic structure in general using the following version of the prosodic hierarchy .

(15) INTP Intonational Phrase
PHONP Phonological Phrase
PRWD Prosodic Word
FT Foot
σ Syllable
μ Mora

Inkelas & Zec (1988) and Zec (1993) describe the assignment of pitch accent and stress. All words in BCS, with the exception of clitics, carry one of four types of pitch accent as a consequence of high tone assignment at the PRWD level, while stress is assigned to the leftmost syllable that contains a mora associated with high tone.[7] Because clitics lack accent and stress they cannot be represented prosodically as PRWDs. This is the case even for those clitics which meet minimal (prosodic) word requirements of bimoraicity (e.g. *joj*, *nam*, *vam*, *im*, *nas*, *vas*, *ih* in table (2) and *sam*, *bih*, *ćeš* in table (3)) or bisyllabicity (e.g. *bismo*, *biste*, *ćemo*, *ćete* in table (3)).

Whether bisyllabic, bimoraic or monomoraic, the requirement of clitics for a phonological host has led to their integration into the prosodic structure of BCS being represented by means of subcategorization for a PRWD. This is captured in the following frame adapted from Zec & Inkelas (1990: 369) in which clitics attach to a PRWD to form a larger PRWD.

(16) Subcategorization frame for BCS enclitics
[[ ]PRWD ___]PRWD

This subcategorization frame is based on clitic attachment to the first PRWD in a clause. As for clitics following the first phrasal constituent of the clause, Zec & Inkelas (1990) do not go into how, or indeed if, the frame might apply. In section 4.2 I suggest that such placement is due to prosodic attachment of the clitic to a category higher up the prosodic hierarchy, namely PHONP. In any case, a clitic and host together form a single prosodic unit which, unlike a sequence of two non-clitics, can be interrupted neither by the addition of extra lexical material, nor by the insertion of a pause.

Summarizing briefly, the PRWD in BCS is the domain within which high tone and stress are assigned and, within a clause, may be extended to include adjacent clitics. Radanović-Kocić (1996: 439) points out that 'the rules for the identification of [prosodic units are] virtually non-existent' for BCS. This is especially so in the case of PHONP. Nevertheless, on the basis of work on the prosodic structure of other languages, it is possible to make some observations about PHONP in BCS.

[7] The four accents in BCS are short rising, long rising, short falling and long falling. See, for example, Lehiste & Ivić (1986), Inkelas & Zec (1988) and Zec (1993).

PHONP can consist of one or more PRWDs and can be mapped from syntactic structure on the basis of mapping theories (e.g. Nespor & Vogel (1986), Selkirk (1986), Zec & Inkelas (1990) and Inkelas & Zec (1995). These theories are in agreement that a branching subject such as *taj čovek*, 'that man', in example (17) constitutes a PHONP.[8]

(17) Taj čovek voli Mariju.
that man love.3.SG.PRES Marija
'That man loves Marija.'

INTP consists of one or more PHONPs and is preceded and followed by pauses or intonational breaks. Appositives, parentheticals and non-restrictive relative clauses obligatorily form INTPs while heavy subjects, other heavy initial constituents, and fronted or focused constituents do so optionally. This optionality lessens with length of constituent, but increases with speech rate. Radanović-Kocić (1996: 439-440) illustrates with examples (18) and (19) that degemination and assimilation, which do not occur across INTP boundaries, are processes which help to define INTP in BCS.

(18) (a) [Za Prvi maj]$_{INTP}$ [ja putujem]$_{INTP}$. → /majja/
on first May I travel
'On May Day I am travelling.'
(b) [Za Prvi maj ja putujem]$_{INTP}$ → /maja/

(19) (a) [Ovaj njihov pas]$_{INTP}$ [čuva kuću]$_{INTP.}$ → /pasčuva/
this their dog guard house
'That dog of theirs is guarding the house.'
(b) [Ovaj njihov pas čuva kuću]$_{INTP.}$ → /paščuva/

The effect of INTP formation on clitic placement is considered in sections 3.2 and 4.1, while the role of PHONP is considered in section 4.2.

3. RECENT ACCOUNTS OF BCS SECOND POSITION CLITIC PLACEMENT

Many recent investigations into clitic placement in BCS have been carried out within the Minimalism/Government and Binding/Principles and Parameters set of syntactic frameworks. These approaches generate clitics in

[8] Prosodic categories are domains within which certain phonological processes occur and other processes do not. To define PHONP in this way for BCS requires investigation into those phonological processes which have PHONP as their maximal domain, as well as those which have PRWD as their maximal domain, i.e. those which cannot apply within PHONP. As far as I am aware, apart from degemination and palatalization evidence (referred to below) from Radanović-Kocić (1996), such work on BCS is currently lacking.

the canonical positions associated with their category. Thus, pronominal clitics are taken to be generated in argument positions within VP, auxiliary clitics in the head position of IP, and the interrogative particle, *li*, in the head position of CP. Pronominal and auxiliary clitics are then subject to movement processes in order to reach their observed positions. However, such approaches run into problems in tackling issues of how and why clitics and, if necessary, their hosts come to occupy positions at or near the beginning of the clause. Such problems are dealt with in sections 3.1 and 3.2. Section 3.1 considers approaches that define second position with respect to the clause, while section 3.2 considers approaches that define second position with respect to INTP.

3.1 *Approaches that move clitics to second position in their clause*

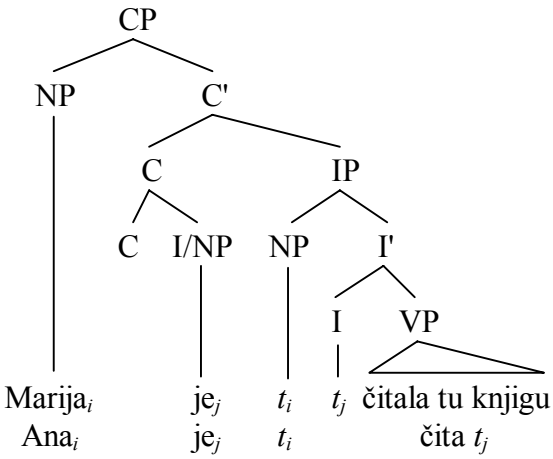
In this section I outline approaches based on the movement of clitics to second position in their clause. These approaches face the following problems which I deal with in turn: (i) syntactic processes that apply to clitics do not apply to non-clitics; (ii) the movement of clitics is poorly motivated; (iii) clitics from different categories move to the same position; (iv) evidence against clitic movement to a single syntactic position; and (v) difficulties in accounting for alternations in clitic placement as observed in BCS.

Research which proposes that BCS clitics move to second position in their clause includes Schütze (1994), Wilder & Ćavar (1994), Halpern (1995), King (1996), Progovac (1996, 2000), Tomić (1996), Rivero (1997) and Franks & King (2000) among others. Placement of clitics after the first syntactic constituent is due to their generation in, or their movement to, a position structurally high enough to ensure that only one constituent appears to the left of the clitic (or clitic cluster). The interrogative particle, *li*, is base generated in such a position, while the auxiliary and pronominal clitics adjoin to such a position. The host constituent can either be generated in or moved to the position to the left of the clitic (cluster). For Schütze (1994), Wilder & Ćavar (1994), King (1996), Progovac (1996), and Tomić (1996) the position occupied by clitics is C. Thus for (20), clitic placement proceeds by right-adjunction of the auxiliary clitic, *je*, to C, and movement of the subject NP, *Marija*, to SPECCP thereby providing a host for *je* to encliticize to. Similarly in (21) the feminine accusative pronominal clitic, which also has the form *je*, moves to C, with the subject NP, *Ana*, again moving to SPECCP to act as host. These movements are represented in (22).

(20)	Marija	=je	čitala	tu	knjigu.
	Marija	AUX.3.SG.PRES	read.PASTP.F.SG	that	book
	'Marija read that book.'				

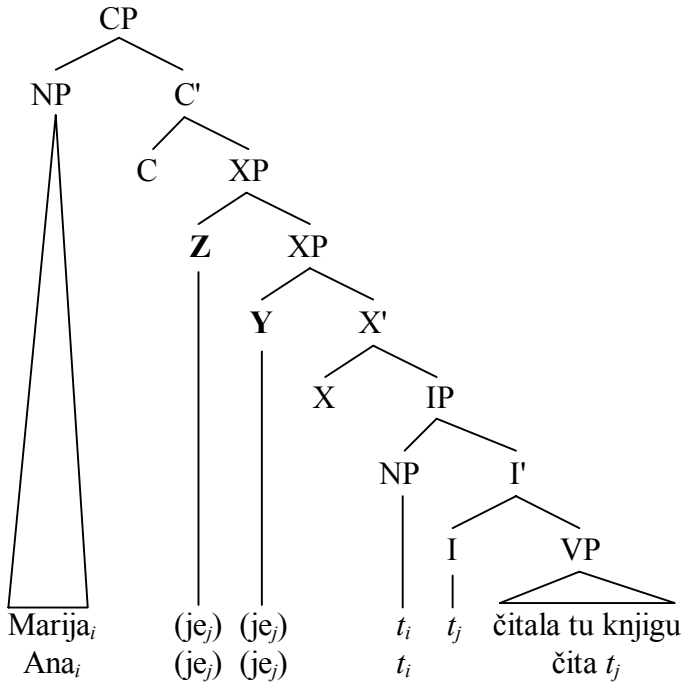
(21) Ana =je čita.
Ana PRN.3.SG.F.ACC read.PRES.3.SG
'Ana is reading it.'

(22)



For other researchers, however, the position that clitics move to is within a separate phrase located between CP and IP. Two possibilities which have appeared in the literature are labelled Y and Z in (23). Position Z has been proposed by Halpern (1995) for whom clitics are left-adjoined to CLEFTP, which is a functional projection located above IP. In cleft constructions, according to Halpern, the cleft marker, *to*, occupies SPECCLEFTP while the head of this phrase is a null CLEFT. In non-cleft constructions, in other words the great majority of clauses, CLEFTP has no other purpose than to provide a position for clitics, if present, to adjoin to.

(23)



Rivero (1997) puts forward position Y as the landing site of moved clitics except *li*, which is base generated in C. Position Y is the specifier of a functional projection, which Rivero calls a Wackernagel phrase (WP), and which lies immediately below CP.[9] If a clitic ends up as the leftmost element in the clause, for instance if there is no complementizer, then some other element must front to either C or SPECCP.

Apart from disagreement over which syntactic position clitics occupy, movement based approaches to clitic placement have a number of other associated problems to which I now turn.

3.1.1 *Different syntactic processes for clitics and non-clitics*

Whichever structural position is proposed for clitics, they can only appear there because syntactic processes treat them differently from non-clitic elements of the same category. In other words, non-clitic auxiliaries such as *bude*, the future perfect auxiliary, in (24), and full NP counterparts of pronominal clitics such as *tu knjigu*, 'that book', in (25), are barred from those positions, presumably for reasons of economy, to which their clitic equivalents in (22) and (23) are obliged to move.

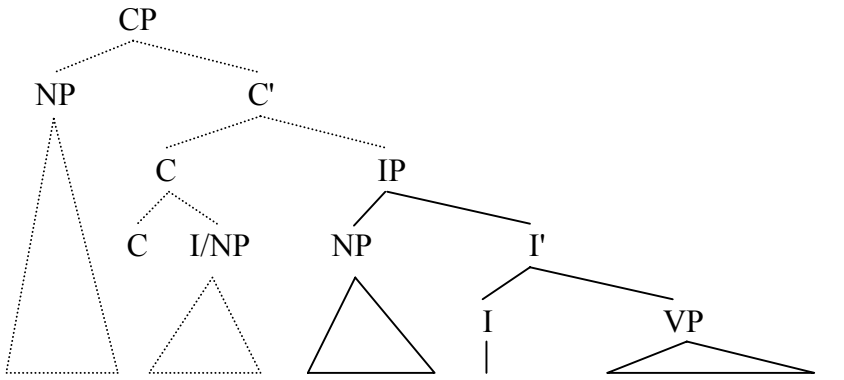
(24) Jovan bude čitao tu knjigu.
Jovan AUX.3.SG.PRES.PF read.PASTP.M.SG that book
'Jovan will have read that book.'

(25) Petar čita tu knjigu.
Petar read.PRES.3.SG that book
'Petar is reading that book.'

These illicit movements are indicated in (26) in the case of right-adjunction to C, the clitic landing site proposed by most of the research referred to above.

[9] Wackernagel (1892) made the observation that clitics were placed second in the clause in early Indo-European languages.

(26)



An undesirable consequence of different syntactic rules and processes applying to clitics and their non-clitic counterparts is the creation of new phrasal projections that have little (e.g. CLEFTP – Halpern 1995) or no (e.g. WP – Rivero 1997) motivation elsewhere in the syntax. This leads, as Legendre (1996: 5) has pointed out, to the postulation of phrase structure that is 'anything but minimal', some of the consequences of which are dealt with in the following three subsections.

3.1.2 *Poor motivation for syntactic movement of clitics*

The second problem is that the motivation of clitic movement, and the syntactic rules and processes according to which it is proposed to take place, receive varying amounts of attention. Halpern elects to 'gloss over the issue of how the clitic gets to be…adjoined to IP' (1995: 18), while King is 'not concerned with how the clitics come to be in C^0…but with how to account for their distribution once they are there' (1996: 275). Another approach is that of Wilder & Ćavar (1994: 30), followed by Tomić (1996: 821), in which clitics are positioned according to the Clitic Placement Condition in (27).

(27) CPC
Clitics must right-adjoin to the next accessible C^0-node.

However, this stipulation is little more than a description of the linear position occupied by clitics, not an explanation of why clitics should be in that position in any case.

A somewhat more reasoned motivation for clitic movement relies on feature checking, a standard motivation for movement by which unchecked features of the moved constituent are checked against features associated

with the landing site or adjacent positions. Progovac (1996: 425), for instance, offers the possibility that auxiliary clitics, being bearers of TENSE, may move to C, which carries TRUTH specifications, on the assumption that TENSE and TRUTH are in some way related. Nevertheless Progovac provides no possible motivation for the movement of pronominal clitics to C.

Rivero (1997: 197-8), on the other hand, suggests that pronominal clitics bear a strong formal feature which must be licensed by a preceding constituent. However, the actual mechanics of the movement from within VP to SPECWP are unclear. It is also unclear why only constituents in C and SPECCP can perform the licensing function. Nor does she address the requirements that might motivate the movement of auxiliary clitics.

Wilder & Ćavar (1994: 54-5), followed somewhat cautiously by Tomić (1996), also employ features to motivate pronominal object clitic movement out of the VP. They propose that such movement avoids Head Movement Constraint violations if pronominal clitics are regarded as heads of DPs with F- and case features. If case assignment is accomplished by DP movement from the VP into the specifier of a higher functional category, the clitic can subsequently adjoin to C by incorporation out of this specifier position. Apart from its speculative nature, this proposal also suffers by introducing extra syntactic complications that don't apply to non-clitic objects which, in this syntactic framework, can be assigned case within the VP. Like Rivero (1997), Wilder & Ćavar (1994) only motivate pronominal clitic placement through feature checking. Auxiliary clitic placement is motivated only by the Clitic Placement Condition (27) which was discussed above.

Feature checking theory has the associated principle of 'greed' whereby movement only occurs to satisfy the needs of the moved constituent to check its features. Hence, the fronting of the direct object, *tu knjigu* 'that book', in (28a) may be justified in terms of focussing or topicalization, thereby satisfying 'greed'. However, a non-topicalized, non-focussed fronting of, for example, a past participle, such as *čitala* 'read' in (28b), is not motivated by satisfaction of its own feature checking requirements.

(28) (a) Tu knjigu =je čitala.
that book AUX.3.SG.PRES read.PASTP.F.SG
'She read that book.'

(b) Čitala =je tu knjigu.
read.PASTP.F.SG AUX.3.SG.PRES that book
'She read that book.'

Thus, while Progovac (1996), Rivero (1997) and Wilder & Ćavar (1994) appeal to feature checking to motivate some of their proposed movements, other movements appear not to be subject to the same requirement. Progovac has nothing further to add regarding this matter, but Rivero (1997:

198) and Wilder & Ćavar (1994: 47) turn to 'last resort' and 'economy' in cases like (28b). Such last resort movement is considered less 'costly' than movement at PF (contra Schütze (1994), Halpern (1995) and King (1996) whose approaches are discussed in section 3.1.5 below).

3.1.3 *Movement of different categories to the same syntactic position*

A further consequence of the requirement for clitics to move to a specific structural position is that this position is then occupied by clitic clusters consisting of clitics of different grammatical categories. Thus, for example (29) the pronominal clitics, *mi* and *ih*, and the auxiliary clitic, *je*, all occupy the same syntactic position, whether that position is claimed to be in CP (in which case they are also in the same position as the question particle, *li*) or between CP and IP (in which case they are not in the same position as *li*).

(29) Da =li =mi =ih =je
COMP Q PRN.1.SG.DAT PRN.3.PL.ACC AUX.3.SG.PRES
dao Jovan?
give.PASTP.M.SG Jovan
'Did Jovan give them to me?'

(Spencer 1991: 355)

None of the approaches discussed so far provide motivation for this except Wilder & Ćavar (1994) through the Clitic Placement Condition stipulation in (27). Those approaches with feature checking use it to address only the movement of one clitic type – Progovac (1996) addresses only auxiliary clitic movement while Rivero (1997) and Wilder & Ćavar (1994) address only pronominal clitic movement.

3.1.4 *Evidence against clitic movement to a single syntactic position*

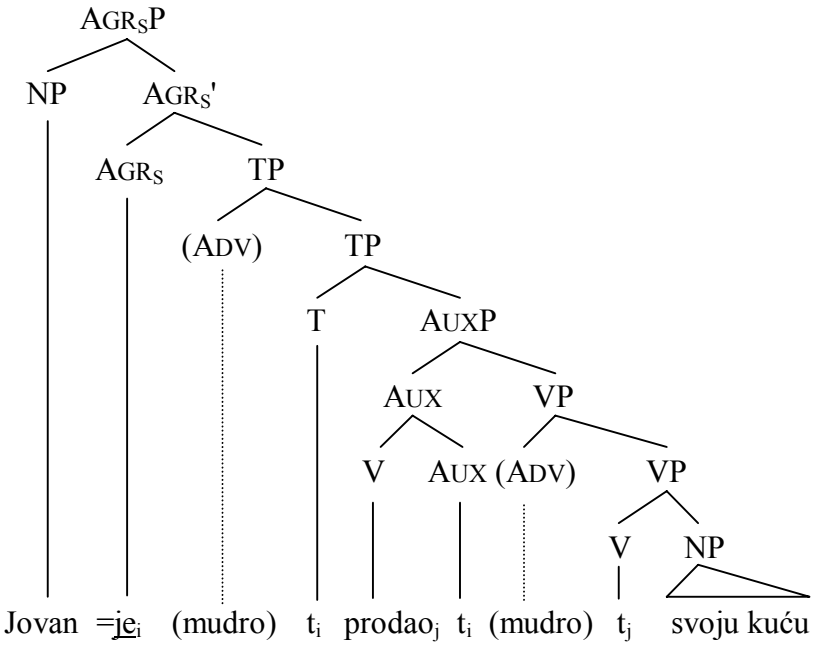
A fourth problem for clitic placement by syntactic processes is evidence, cast within movement-based syntactic theory, to suggest that clitics, in fact, do not occupy a fixed syntactic position. Such evidence comes from participle-adverb-clitic interactions (Bošković 1995, 1997, 2000).

Bošković (e.g. 1995: 246-7) cites data in which participles can precede VP adverbs but not sentential adverbs. In the case of adverbs such as *mudro*, 'wisely', which are ambiguous between VP and sentential readings, the interpretation differs according to whether the adverb precedes or follows the participle, as is shown in example (30).

(30) (a) Jovan =je mudro prodao svoju kuću.
Jovan AUX.3.SG.PRES wisely sell.PASTP.M.SG his house
'Jovan sold his house in a wise manner.' (VP adverb)
or 'It was wise of Jovan to sell his house.' (sentential adverb)
(b) Jovan =je prodao$_i$ mudro t_i svoju kuću.
Jovan AUX.3.SG.PRES sell.PASTP.M.SG wisely his house
'Jovan sold his house in a wise manner.' (VP adverb)
but *'It was wise of Jovan to sell his house.' (sentential adverb)
(Bošković 1995: 247)

Example (30b), in which the past participle *prodao*, 'sold (M.SG)', precedes the adverb, is grammatical only if the adverb has a manner interpretation.

(31)



Bošković (1995: 248) treats BCS sentential adverbs as located between AGR$_S$ and T(ENSE), assuming them to be adjoined to TP. If, in Bošković's terms, a participle cannot move across a sentential adverb, then it must be located lower than the adverb's TP-adjunction site. The diagram in (31) shows the participle adjoining to AUX (to check a [+AUX] feature – Bošković, 1995: 248). This movement of the participle crosses a (VP-adjoined) VP adverb but cannot cross a (TP-adjoined) sentential adverb.

For the sentences in (32), then, Bošković (1995: 248) claims that placing a sentential adverb such as *nesumnjivo*, 'undoubtedly', after the clitic, as in (33), shows that the clitic must have a different structural position in each case.

(32) (a) Jovan =je istukao Petra.
Jovan AUX.3.SG.PRES beat.PASTP.M.SG Petar
'Jovan beat Petar.'

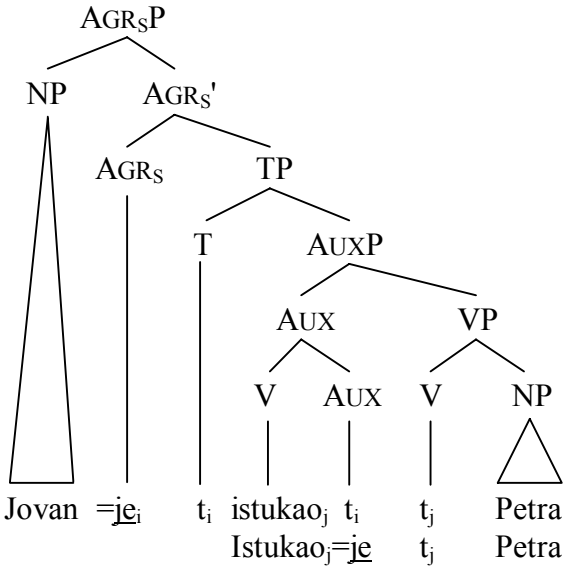
(b) Istukao =je Petra.
beat.PASTP.M.SG AUX.3.SG.PRES Petar
'He beat Petar.'

(33) (a) Jovan =je nesumnjivo istukao Petra.
Jovan AUX.3.SG.PRES undoubtedly beat.PASTP.M.SG Petar
'Jovan undoubtedly beat Petar.'

(b) * Istukao =je nesumnjivo Petra.
beat.PASTP.M.SG AUX.3.SG.PRES undoubtedly Petar

In (33a), and hence (32a), the clitic is higher than TP, the assumed adjunction site of *nesumnjivo*. However, (33b) is ungrammatical because the participle *istukao*, 'beat' (M.SG), is higher than the sentential adverb, a configuration ruled out in (31). The implication for (32b), then, is that the clitic should be lower than TP and therefore in a different structural position than in (32a). Examples (32a, b) are represented in (34).

(34)



3.1.5 *Difficulties with the first word/first syntactic constituent alternation*

As for clitic placement after the first word within a constituent as in (1b), repeated below as (35), syntactic movement approaches encounter further difficulty.

(35) Taj =je čovek čitao knjigu.
that AUX.3.SG.PRES man read.PASTP.M.SG book
'That man read a book.'

Some accounts such as Rivero (1997) make no reference to alternating clitic placement of BCS. Others acknowledge it but provide no account for it.

Wilder & Ćavar (1994: 34-37) and Progovac (1996: 414-415) deny that the clitic in (35) interrupts a syntactic constituent. Instead they argue that first position in such examples is occupied by elements which are constituents in their own right, since they can be questioned or displaced from their head nouns, as in (36)-(38), independently of the presence of clitics.

(36) (a) Anina/mladja/ova dolazi sestra.
Ana's/younger/this come.3.SG.PRES sister
'Ana's/the younger/this sister is coming.'
(b) Čija/koja dolazi sestra?
whose/which come.3.SG.PRES sister
'Whose/which sister is coming.'

(Progovac 1996: 415)

(37) (a) Zeleno =je Ivan kupio auto.
green AUX.3.SG.PRES Ivan buy.PASTP.M.SG car
'Ivan bought a green car.'
(b) Kakvo =je Ivan kupio auto?
how AUX.3.SG.PRES Ivan buy.PASTP.M.SG car
'What sort of car did Ivan buy.'

(Wilder & Ćavar 1994: 36)

(38) (a) Tatino =je Ivan razbio auto.
father's AUX.3.SG.PRES Ivan ruin.PASTP.M.SG car
'Ivan has ruined his father's car.'
(b) Čije =je Ivan razbio auto.
whose AUX.3.SG.PRES Ivan ruin.PASTP.M.SG car
'Whose car has Ivan ruined?'

(Wilder & Ćavar 1994: 37)

Schütze (1994: 400-404) offers evidence against treating the phenomenon exemplified in (36)-(38) in the same way as clitic placement in (35). His argument is based on the different behaviour of clitics and nonclitic material when the head noun has multiple modifiers.

(39) (a) U veliku Jovan ulazi sobu.
in big Jovan enter.3.SG.PRES room
'Jovan enters the big room.'

(b) U veliku =je Jovan ušao sobu.
in big AUX.3.SG.PRES Jovan enter.PASTP.M.SG room
'Jovan entered the big room.'

(c) ?? U ovu veliku Jovan ulazi sobu.
in this big Jovan enter.3.SG.PRES room
'Jovan enters this big room.'

(d) * U ovu Jovan ulazi veliku sobu.
in this Jovan enter.3.SG.PRES big room

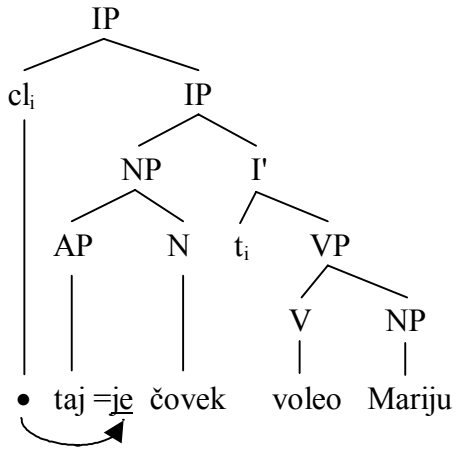
(e) U ovu =je veliku sobu Jovan
in this AUX.3.SG.PRES big room Jovan
ušao.
enter.PASTP.M.SG
'Jovan entered this big room.'

Example (39b) shows the clitic *je* being hosted by an element which Wilder & Ćavar (1994) and Progovac (1996) take as being capable of independent displacement as in (39a). However, when the head noun has multiple modifiers the clitic is permissible after the first modifier, as in (39e), whereas displacing the first modifier and not the second as in (39d) is ungrammatical. Due to this and the marginal acceptability of (39c), Schütze suggests that clitic placement is not parallel to modifier displacement.

Some approaches, e.g. Schütze (1994), Halpern (1995), and King (1996), see clitic placement after the first word as a prosodic repair mechanism when syntactic processes leave clitics in first clausal position. This is achieved by 'prosodic inversion', in which clitics move rightward by one PRWD at most. Thus the clitic is provided with a phonological host. Placement other than after the first PRWD is attributed to syntax. Prosodic inversion is demonstrated in (41), from Halpern (1995: 19), for the sentence in (40).

(40) Taj =je čovek voleo Mariju.
that AUX.3.SG.PRES man love.PASTP.M.SG Marija
'That man loved Marija.'

(41)



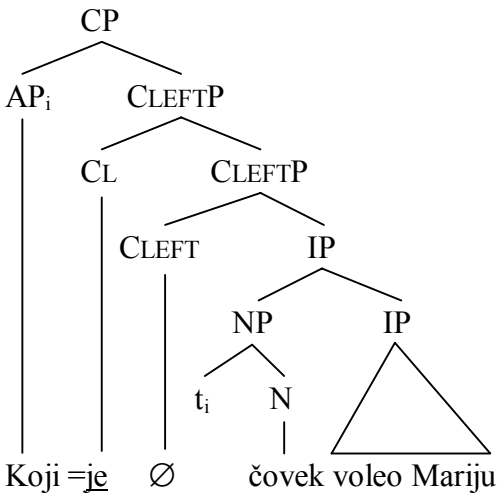
Prosodic inversion runs into trouble with clauses like interrogatives, as in (42), with complex or branching elements in SPECCP.

(42) (a) Koji čovek =je voleo Mariju?
which man AUX.3.SG.PRES love.PASTP.M.SG Marija
'Which man loved Marija?'

(b) Koji =je čovek voleo Mariju?
which AUX.3.SG.PRES man love.PASTP.M.SG Marija
'Which man loved Marija?'

Whether clitics adjoin to C (Schütze 1994, King 1996) or CLEFTP (Halpern 1995) (see discussion at the beginning of section 3.1 for details), both positions are below the SPECCP position of the WH-phrase, *koji čovek*. Prosodic inversion operates by moving clitics one PRWD to the right. For *je* to interrupt *koji čovek*, however, requires a leftward movement so prosodic inversion cannot provide an explanation. Halpern (1995: 77-95) resorts to an alternative explanation for this, one in which the WH-phrase is discontinuous, as illustrated in (43).

(43)



Halpern (1995: 91-95) proposes that the WH-phrase first adjoins to IP with the WH-modifier subsequently fronting to SPECCP. The 'uniformity of clitic placement' that Halpern (1995: 77) claims to achieve is not borne out by his need for two separate mechanisms to account for clitic placement following the first PRWD, one for declarative clauses and one for (WH-)interrogative clauses. Schütze (1994) and King (1996) do not offer a solution to clitic placement after the first PRWD in interrogatives.

3.2 *Approaches that move clitics to second position in their intonational phrase*

An alternative to defining second position syntactically is to define it in prosodic terms so that clitics are considered to occur second within their INTP rather than second within their clause. This approach is proposed by Radanović-Kocić (1988, 1996) on the basis of sentences like (44)-(49) in which fronted (44) and/or heavy (45), (46) initial phrases, appositive (47) and parenthetical (48) phrases, and non-restrictive relative clauses (49) are, or can be, INTPs in their own right, and clitics are, or can be, in second position in a following INTP.

(44) (a) [Marko =je čitao knjigu]$_{INTP}$.
Marko AUX.3.SG.PRES read.PASTP.M.SG book
'Marko read the book.'

(b) [Knjigu]$_{INTP}$ [Marko =je čitao]$_{INTP}$.
book Marko AUX.3.SG.PRES read.PASTP.M.SG
'As for the book, it was Marko who read it.'

(45) [Jezičke razine više od rečenice]$_{INTP}$ [vrlo =<u>su</u>…]$_{INTP}$
linguistic levels higher than sentence very AUX.3.PL.PRES
'Linguistic units higher than S are very...'

(46) (a) [Kolutovi plavičastog dima]$_{INTP}$ [penjali
circles bluish smoke rise.PASTP.M.PL
=<u>su</u> =<u>se</u>]$_{INTP}$.
AUX.3.PL.PRES REFL
'Circles of bluish smoke were rising.'

(b) [Kolutovi plavičastog dima =<u>su</u> =<u>se</u>
circles bluish smoke AUX.3.PL.PRES REFL
penjali]$_{INTP}$.
rise.PASTP.M.PL
'Circles of bluish smoke were rising.'

(47) [Ja]$_{INTP}$, [tvoja mama]$_{INTP}$, [obećala =<u>sam</u>
I your Mum promise.PASTP.F.SG AUX.1.SG.PRES
=<u>ti</u> igračku]$_{INTP}$.
PRN.2.SG.DAT toy
'I, your Mum, promised you a toy.'

(48) [To znači da]$_{INTP}$, [kao što rekoh]$_{INTP}$, [sve =<u>se</u>
that means that as said everything REFL
obavlja po planu]$_{INTP}$.
goes according plan
'That means that, as I said, everything goes according to plan.'

(49) [Moja sestra]$_{INTP}$, [koja je u Sarajevu]$_{INTP}$, [sjeća
My sister who is in Sarajevo remembers
=<u>vas</u> =<u>se</u>]$_{INTP}$.
PRN.2.PL.ACC REFL
'My sister, who is in Sarajevo, remembers you.'

(Radanović-Kocić 1996: 435, 437)

These examples suggest that clitics are in a position other than second. Most syntactic movement based approaches stipulate that any elements preceding a clitic host are 'extraclausal' (Progovac, 1996: 424) or 'skipped' material (Halpern, 1995: 68). Accounting for clitic placement in terms of prosodic structure explains, rather than stipulates, the lack of contribution of some elements towards determining second position. Variants of this approach include Radanović-Kocić (1988, 1996) and Bošković (1995, 2000).

Bošković (1995, 2000) proposes that clitics move in syntax (though not to a fixed position – see section 3.1.4) and that any syntactic output which

violates the second position requirement of clitics is rejected at PF.[10] Bošković (1995: 263) expresses the second position requirement as the morphophonological subcategorization framework in (50).

(50) (a) #__ (where # is an intonational phrase boundary)
(b) suffix

By (50a) BCS second position enclitics must be at the left edge of INTP, while by (50b) they must be suffixed to some other element which therefore occupies first position in INTP, and provides a phonological host for the clitic. Any syntactic derivation which fails to satisfy (50) is filtered out at PF.

This approach, although it rejects a fixed syntactic position for clitics, nevertheless relies on many of the syntactic assumptions of the approaches dealt with in section 3.1. Clitic placement is claimed to result from syntactic processes that do not apply to corresponding nonclitics. On the other hand, recognizing the role of prosodic factors, particularly INTP as the domain of cliticization, improves upon the other approaches discussed so far by avoiding the need to label material preceding the clitic host as 'extra-clausal'. Despite this Bošković does not discuss the clitic host (as opposed to its domain) in prosodic terms, instead treating it as a syntactic constituent, including those cases in which clitics interrupt a branching syntactic constituent.

According to Radanović-Kocić (1988, 1995) clitics remain in their base-generated syntactic positions and are moved to second position at PF 'as an adjustment in the intonational contour of the utterance as a whole' (1996: 442). This is achieved by means of the following rules.

(51) (a) Cliticization (Radanović-Kocić 1996: 433)[11]
Assign the feature [+clitic] to pronouns and auxiliaries in all positions except when they carry phrasal stress or when not preceded by an unstressed element.
(b) Clitic Movement (Radanović-Kocić, 1996: 441)
Move all [+clitic] elements within an INT[onational] P[hrase] into the position after the first PHON[ological] P[hrase] of the same INTP.

[10] Bošković's version of movement is implemented as 'copy and delete' – clitics are copied to higher structural positions according to the needs of the syntax. At PF only the highest copy of the clitic is retained unless it lacks appropriate phonological support, in which case the next highest copy is retained.

[11] The version of this rule in Radanović-Kocić (1988: 88) is more explicit: 'Assign the feature [+clitic] to the accusative, dative, and genitive pronouns, and auxiliaries (except *budem*) and the copula in all positions except when they are carrying phrasal stress and when not preceded by an element that can serve as its host.'

These rules are the prosodic counterparts of the syntactic processes discussed in section 3.1 which apply to clitics but not to their nonclitic counterparts. Nevertheless, (51b) contains the insight that the clitic host is a prosodic constituent, namely the first PHONP within the relevant INTP. While Radanović-Kocić's approach stipulates this to be the case, I propose in section 4.2 that PHONP as the clitic host falls out from other principles of prosodic structure.

A further problem for Radanović-Kocić (1988, 1996) is how to account for clitics being able to interrupt branching syntactic constituents such as NPs with the structure Adj-N such as (1b) repeated in (52b).

(52)	(a)	Taj	čovek	=je	čitao	knjigu.
		that	man	AUX.3.SG.PRES	read.PASTP.M.SG	book
	(b)	Taj	=je	čovek	čitao	knjigu.
		that	AUX.3.SG.PRES	man	read.PASTP.M.SG	book
		'That man read a book.'				

The suggestion she offers (1996: 442) is that due to 'interaction between the prosodic structure and emphatic or contrastive stress...elements with such a stress fall somewhere between a [prosodic] word and phonological phrase, i.e. the emphasis causes the adjective to be optionally treated as a phonological phrase'. However, no further evidence is advanced. While Radanović-Kocić (1988, 1996) can account prosodically for clitic placement such as in (52a), there is no convincing explanation for the type in (52b).

3.3 *Summary*

In this section I have shown that accounts based on syntactic placement of clitics do not explain why syntax treats clitics differently than it treats nonclitics. Proposals which suggest feature checking as the source of clitic movement are either too vague or incomplete. In other words, there is no clear motivation for syntactic movement of clitics, which is partly responsible for the wide variety of syntactic treatments on offer. If syntax, or PF repairs to syntax, cannot fully explain how BCS clitics are positioned then it makes sense to investigate the roles of other components of the grammar. Prosodic structure interacts with syntactic processes in the analyses proposed by Radanović-Kocić (1988, 1996) and Bošković (1995, 1997, 2000). In the next section I propose an account of BCS clitic placement in which prosodic structure interacts with the morphological process of phrasal affixation.

4. PHRASAL AFFIXATION AND THE ALTERNATION IN BCS CLITIC PLACEMENT

In this section I outline the phrasal affixation view of cliticization, in particular adapting the approach of Anderson (1992, 1993, 1996, 2000) to provide a prosodic account of the BCS clitic placement alternation. I do this by incorporating Selkirk's (1995) ideas on the prosodization of function words as well as the proposal by Radanović-Kocić (1988, 1996) and Bošković (1995, 2000) that the domain of cliticization in BCS is INTP. This allows the phrasal affixation approach to be extended to cover data which is unaccounted for in Anderson's approach.

4.1 *Phrasal affixation*

Phrasal affixation has been put forward to account for clitic placement by a number of researchers including Klavans (1982, 1985), Miller (1992), Miller & Sag (1993) and Legendre (1996, 2000). Here, I outline Anderson's (1992, 1993, 1996, 2000) approach.

Anderson (1993: 75) describes special clitics as 'material introduced into Phonological Form by rules of phrasal affixation entirely parallel to the introduction of affixes within words by Word Formation rules'. He argues that '[w]hile phrasal properties are commonly realized in the morphology of specific items within those phrases...in other cases they are realized by special clitics' (1992: 217). To determine the placement of special clitics within phrases Anderson proposes the parameters in (53). These parameters are analogous to those in (54) for the placement of affixes within words (1992: 210).

(53) (a) The clitic is located within some syntactic constituent (S vs. VP vs. NP, etc.) which constitutes its domain.
(b) The clitic is located by reference to the {first vs. last vs. head} element of a specified sort within the constituent in which it appears.
(c) The clitic {precedes vs. follows} this reference point.

(54) (a) The affix is located in the scope of some constituent which constitutes its domain. This may be either a morphological constituent (the word-structural head vs. entire word) or a prosodic one (prosodic word).
(b) The affix is located by reference to the {first vs. last vs. main stressed} element of a given type within the constituent in which it appears.
(c) The affix {precedes vs. follows} the reference point.

Parameters (53b, c) predict six attested phrasal affix types (Anderson 1992: 202): initial {first, precedes}, second position {first, follows}, final {last, follows}, penultimate position {last, precedes}, pre-head {head, precedes} and post-head {head, follows}.

In terms of parameter (53a), Anderson considers BCS second position clitics to have the clause as their domain. With respect to parameters (53b, c), BCS second position clitics are located with reference to the first element of their domain, and they follow that element. It remains to define the type of the first element and to account for its alternation.

To do this Anderson (1996, 2000) turns to Optimality Theory (OT – Prince & Smolensky 1993; McCarthy & Prince 1993). OT is a system comprising the components GEN and EVAL. EVAL consists of constraints ranked in a hierarchy according to their influence or degree of violability. This constraint hierarchy evaluates the well-formedness of various candidate outputs generated by GEN. The optimal or grammatical candidate is that which best satisfies the constraint hierarchy.

Anderson (1996, 2000) reinterprets the parameters in (53) in terms of three constraints – EDGEMOST(e, E, D), NON-INITIAL(e, D), and INTEGRITY(C). EDGEMOST(e, E, D) places some element, e, at some edge, E, of some domain, D, while NON-INITIAL(e, D) requires that e must not be first in the domain. For clausal second position clitics, then, by ranking the constraint NON-INITIAL(CL, S) above EDGEMOST(CL, L, S), Anderson (2000: 317) captures the fact that such clitics, CL, occupy a position as close as possible to the left edge, L, of their clause, S, without actually being in initial position.[12] INTEGRITY(C)-type constraints disallow the introduction of phonological material into a prosodic or syntactic category, C. The particular instance of this constraint type used by Anderson (2000: 320) is INTEGRITY(XP). In (55) the constraint INTEGRITY(XP) is ranked above EDGEMOST(CL, L, S) which gives clitic placement after the first syntactic phrasal constituent.

(55) NON-INITIAL(CL, S) >> INTEGRITY(XP) >> EDGEMOST(CL, L, S)

On the other hand, clitic placement after the first PRWD is suggested by Anderson (2000: 321) to follow from the ranking in (56).

(56) NON-INITIAL(CL, S) >> EDGEMOST(CL, L, S) >> INTEGRITY(XP)

The effects of these alternative rankings are shown in tableaux (58) and (59) for example (57). Anderson (1996, 2000) does not use tableaux to

[12] I assume that Anderson uses 'S' and 'sentence' to refer to 'clause' where other researchers, including those covered in the previous section, have used CP or IP.

illustrate the workings of his constraints and does not indicate the nature of the input. Here, I follow Legendre (2001) and take the input to consist of predicate-argument structure, lexical items and a tense feature. In addition I assume that Anderson intends the constraint EDGEMOST(CL, L, S) to be a gradient constraint in that a clitic incurs more violations the further it is from the left edge of the clause. I further assume that violations of EDGEMOST(CL, L, S) are counted in terms of PRWDS.[13]

(57) (a) Taj pesnik =je napisao knjigu.
that poet AUX.3.SG.PRES write.PASTP.M.SG book
'That poet wrote a book'.

(b) Taj =je pesnik napisao knjigu.
that AUX.3.SG.PRES poet write.PASTP.M.SG book
'That poet wrote a book'.

(58) Clitic placement after the first syntactic phrasal constituent

Input : *napisati*$_V$ (x, y); [past]; x = *taj pesnik*$_{NP}$; y = *knjigu*$_{NP}$	*INIT. (CL, S)	INTEG. (XP)	EDGEM. (CL, L, S)
(a) Je= [taj pesnik]$_{NP}$ napisao knjigu.	*!		
(b) [Taj =je pesnik]$_{NP}$ napisao knjigu.		*!	*
(c) ☞ [Taj pesnik]$_{NP}$ =je napisao knjigu.			**

(59) Clitic placement after the first prosodic word

Input : *napisati*$_V$ (x, y); [past]; x = *taj pesnik*$_{NP}$; y = *knjigu*$_{NP}$	*INIT. (CL, S)	EDGEM. (CL, L, S)	INTEG. (XP)
(a) [Je= taj]$_{PRWD}$ [pesnik]$_{PRWD}$ napisao knjigu.	*!		
(b) ☞ [Taj =je]$_{PRWD}$ [pesnik]$_{PRWD}$ napisao knjigu.		*	*
(c) [Taj]$_{PRWD}$ [pesnik =je]$_{PRWD}$ napisao knjigu.		**!	

In tableau (58), although the winning candidate, (c), incurs two violations of EDGEMOST(CL, L, S), it fares better than the others as it does not violate the

[13] As Anderson (1996, 2000) defines the domain of cliticization syntactically perhaps violations of EDGEMOST(cl, L, S) should be counted in terms of 'syntactic' words. However, this doesn't work where the first syntactic word is a preposition. In BCS prepositions (and conjunctions) are proclitics and attach prosodically to a following PRWD. It is this combination that second position clitics attach to as illustrated in (i) from Zec & Inkelas (1990: 367).

(i) (a) U kući =je Petar.
in house AUX.3.SG.PRES Petar
'Petar is in the house.'

(b) *U =je kući Petar.
in AUX.3.SG.PRES house Petar

higher ranked constraints like candidates (a) and (b). In tableau (59), however, candidate (c) is now worse than the winning candidate, (b), because (b) has one less violation of EDGEMOST(CL, L, S). The fact that candidate (b) violates INTEGRITY(XP), unlike (c), has no effect because INTEGRITY(XP) is now ranked lower than EDGEMOST(CL, L, S).[14]

The major problem with this approach to alternating BCS second position clitic placement is that it does not account for cases like (46), repeated here as (60), where clitics are placed later in a clause than the position following the first syntactic phrasal constituent.

(60) (a) [Kolutovi plavičastog dima]$_{INTP}$ [[penjali]$_{PHONP}$
circles bluish smoke rise.PASTP.M.PL
=<u>su</u> =<u>se</u>]$_{INTP}$.
AUX.3.PL.PRES REFL
'Circles of bluish smoke were rising.'

(b) [[Kolutovi plavičastog dima]$_{PHONP}$ =<u>su</u> =<u>se</u>
circles bluish smoke AUX.3.PL.PRES REFL
penjali]$_{INTP}$.
rise.PASTP.M.PL
'Circles of bluish smoke were rising.'

With INTEGRITY(XP) ranked above EDGEMOST(CL, L, S), as in tableau (61), the winning candidate is (d) which corresponds to (60b). Example (60a)/ (61e), although it is grammatical, is rejected by this ranking, as indicated by the '👎' symbol.

(61) Clitic placement after the first syntactic phrasal constituent

Input: *penjati se*$_V$ (x); [past]; x = *kolutovi plavičastog dima*	*INIT. (CL,S)	INTEG. (XP)	EDGEM. (CL,L,S)
(a) <u>Su</u>= <u>se</u>= [kolutovi plavičastog dima]$_{NP}$ penjali.	*!		
(b) [Kolutovi =<u>su</u> =<u>se</u> plavičastog dima]$_{NP}$ penjali.		*!	*
(c) [Kolutovi plavičastog =<u>su</u> =<u>se</u> dima]$_{NP}$ penjali.		*!	**
(d) ☞ [Kolutovi plavičastog dima]$_{NP}$ =<u>su</u> =<u>se</u> penjali.			***
(e) 👎 [Kolutovi plavičastog dima]$_{NP}$ penjali =<u>su</u> =<u>se</u>.			****!

With the opposite ranking the outcome is as in tableau (62) giving an output with the clitics placed after the first prosodic word of the NP *kolutovi plavičastog dima*.[15] Again, the grammatical (60a)/(62e) is not selected.

[14] Constraint re-ranking in a grammar is briefly discussed at the end of section 4.2.

[15] This form is acceptable for most of my informants, although (60b) is preferred.

(62) Clitic placement after the first prosodic word

Input: *penjati se*$_V$ (x); [past]; x = *kolutovi plavičastog dima*	*INIT. (CL,S)	EDGEM. (CL,L,S)	INTEG. (XP)
(a) [Su= se= kolutovi]$_{PRWD}$ plavičastog dima penjali	*!		
(b) ☞ [Kolutovi =su =se]$_{PRWD}$ plavičastog dima penjali.		*	*
(c) Kolutovi [plavičastog =su =se]$_{PRWD}$ dima penjali.		**!	*
(d) Kolutovi plavičastog [dima =su =se]$_{PRWD}$ penjali.		**!*	
(e) ☜ Kolutovi plavičastog dima [penjali =su =se]$_{PRWD}$.		**!**	

Neither ranking predicts (60a) because the prosodic structure of such sentences is not accounted for in Anderson's (1996, 2000) approach. Radanović-Kocić (1996: 435) suggests that a heavy subject NP such as *kolutovi plavičastog dima* can optionally be pronounced with an intonational break following it. If so the NP forms an INTP on its own and clitic placement is delayed, occurring in the second INTP which contains the verb to which the clitics are related. In the following section I show how the prosodic structure of clitics and their hosts can be incorporated into the phrasal affix approach to clitics to account for examples like (60a).

4.2 *A prosodic solution to BCS clitic placement alternation*

In this section I present a modified version of Anderson's (1996, 2000) approach which accounts for data such as that in (60). This modification not only incorporates Radanović-Kocić's (1996) proposal that the domain of cliticization for BCS second position clitics is the intonational phrase, it also provides a prosodic account of the alternation in BCS clitic placement, which Radanović-Kocić (1996) fails to address adequately.

The constraints proposed in Anderson (1996, 2000) are given in (63).

(63) (a) NON-INITIAL(CL, S) (clitics cannot occupy first position in the sentence).
(b) EDGEMOST(CL, L, S) (clitics must be placed at the leftmost edge of the sentence).
(c) INTEGRITY(XP) (phonological material cannot be introduced into syntactic constituents).

Replacing S with INTP as the domain of cliticization allows (63a) to be reinterpreted as (64).

(64) * INITIAL(CL, INTP) (clitics cannot occupy first position in INTP).

Following Prince & McCarthy (1993b: 93) for whom 'G[eneralized] A[lignment] subsumes EDGEMOST', EDGEMOST(CL, L, S) can be reinterpreted as the alignment constraint in (65).

(65) ALIGN(CL, L; INTP, L) (for any clitic, its left edge must align with the left edge of some INTP);

To give clitic placement in the leftmost non-initial (i.e. second) position, as illustrated by tableau (67), these constraints must be ranked as in (66).

(66) *INITIAL(CL, INTP) >> ALIGN(CL, L; INTP, L)

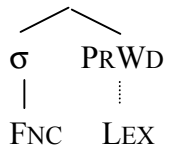
(67) Interaction between *INITIAL(CL, INTP) and ALIGN(CL, L; INTP, L)

	*INITIAL	ALIGN_{CL}
(a) [CL= A]PRWD [B]PRWD	*!	
(b) ☞ [A =CL]PRWD [B]PRWD		*

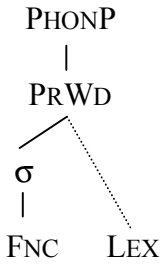
INTEGRITY(XP), on the other hand, can be replaced with constraints that allow the prosodic structure of clitics and their hosts to be taken into account. To do this requires recourse to Selkirk's (1995) work on the prosodization of function words.

Selkirk (1995) proposes alternative prosodizations, including those in (68), for sequences consisting of a lexical word (LEX) and a weak, clitic or unstressed form of a function word (FNC).[16]

(68) (a)



(b)



However, each of these could be ruled out by the Strict Layer Hypothesis which has been suggested by Selkirk (1984) and Nespor & Vogel (1986), among others, to constrain prosodic structures so that any prosodic constituent can immediately dominate only constituents of the next category down in the hierarchy. Thus, PHONP must dominate only PRWD (contrary to (68a)), which in turn must dominate only FT (contrary to (68b)). Selkirk

[16] The dashed lines connecting LEX to PRWD in (68) indicate prosodic structure at the foot and syllable levels which is not represented.

(1995), however, proposes an OT treatment of the Strict Layer Hypothesis and breaks it down into the four separate constraints on prosodic domination in (69).[17]

(69) Constraints on Prosodic Domination (C^n = some prosodic category)
- (a) LAYEREDNESS – no C^i dominates a C^j, where j > i, (e.g. no σ dominates a FT).
- (b) HEADEDNESS – any C^i must dominate a C^{i-1}, unless C^i = σ, (e.g. a PRWD must dominate a FT).
- (c) EXHAUSTIVITY – no C^i immediately dominates a constituent C^j, where j < i-1, (e.g. No PRWD immediately dominates a σ).
- (d) NONRECURSIVITY – no C^i dominates C^j, where j = i, (e.g. No FT dominates a FT).

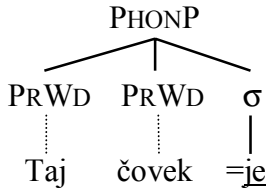
Both representations in (68) have EXHAUSTIVITY violations – (68a) violates $\text{EXH}_{\text{PHONP}}$ (EXHAUSTIVITY with respect to PHONP) since PHONP immediately dominates σ, not PRWD, while (68b) violates EXH_{PRWD}, since PRWD immediately dominates σ, not FT.

Turning now to the BCS example in (70a), if Radanović-Kocić's (1996) proposal that clitics attach to the first PHONP in their INTP holds true, then the clitic is prosodized as in (68a). This is represented in (70b, c).

(70) (a) Taj čovek =je čitao knjigu.
that man AUX.3.SG.PRES read.PASTP.M.SG book
'That man read a book.'

(b) $[[[\text{Taj}]_{\text{PRWD}}\ [\text{čovek}]_{\text{PRWD}}\ \text{je}]_{\text{PHONP}}\ [\text{čitao knjigu}]_{\text{PHONP}}]_{\text{INTP}}$

(c)



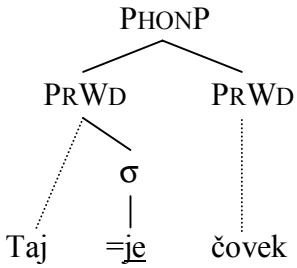
For clitic placement after the first word, as in (71a), the clitic is prosodized as in (71b, c).

(71) (a) Taj =je čovek čitao knjigu.
that AUX.3.SG.PRES man read.PASTP.M.SG book
'That man read a book.'

[17] Selkirk (1995: 443) suggests that LAYEREDNESS and HEADEDNESS are inviolable constraints while EXHAUSTIVITY and NONRECURSIVITY are violable. If LAYEREDNESS and HEADEDNESS really are universal properties then their proper place within OT is GEN rather than the constraint hierarchy. This issue does not affect the rest of my argument.

(b) [[[Taj je]$_{\text{PRWD}}$ [čovek]$_{\text{PRWD}}$]$_{\text{PHONP}}$ [čitao knjigu]$_{\text{PHONP}}$]$_{\text{INTP}}$

(c)



The choice between prosodizing clitics as in (70b, c) or (71b, c) comes down to the relative ranking of the constraints EXH$_{\text{PHONP}}$ and EXH$_{\text{PRWD}}$. And the choice between placement of second position clitics after the first PHONP or after the first PRWD can be captured by the interaction of EXH$_{\text{PHONP}}$ and EXH$_{\text{PRWD}}$ with the constraint ranking in (66), in which *INITIAL(CL, INTP) outranks ALIGN(CL, L; INTP, L).

Consider now how EXH$_{\text{PHONP}}$ and EXH$_{\text{PRWD}}$ interact with *INITIAL(CL, INTP) and ALIGN(CL, L; INTP, L). The relative ranking of *INITIAL(CL, INTP) and the EXHAUSTIVITY constraints can be determined by considering contexts in which there is nothing for the clitic to follow, as in (72).

(72) Kome =si dao knjigu? **Njemu**/*=Mu.
who AUX.2.SG.PRES give.PASTP.M.SG book PRN.3.SG.M.DAT
'Who did you give the book to? To him.'
(Radanović-Kocić 1996: 430)

EXHAUSTIVITY is violated by all structures containing a clitic, even though violation could be avoided by the presence of the equivalent full form. However, (72) shows that *INITIAL(CL, INTP) is respected because the presence of the full form is necessary. This suggests that violations of EXHAUSTIVITY are more tolerable than violations of *INITIAL(CL, INTP) and hence that the latter constraint outranks the former, as summarized in (73).[18]

[18] This is not to suggest that *INITIAL(CL, INTP) is inviolable. For instance in (i) the proclitic preposition *u,* 'in', violates *INITIAL(CL, INTP). However, I assume this violation to be forced by satisfaction of a higher ranked constraint. Moreover, unlike auxiliary and pronominal clitics, BCS proclitics have no 'full' form alternative.

(i) U kući =je Petar.
in house AUX.3.SG.PRES Petar
'Petar is in the house.'

(73) Interaction between *INITIAL(CL, INTP) and EXHAUSTIVITY

	*INITIAL	EXH
(a) [CL= A]$_{PRWD}$ [B]$_{PRWD}$	*!	*
(b) ☞ [A =CL]$_{PRWD}$ [B]$_{PRWD}$		*

As for the relative ranking of ALIGN(CL, L; INTP, L) and the EXHAUSTIVITY constraints, this can be determined by considering their respective roles in (70a). In this example, the clitic follows *taj čovek*, an outcome that is only guaranteed if EXH$_{PRWD}$ outranks ALIGN(CL, L; INTP, L) (as well as outranking EXH$_{PHONP}$). If ALIGN(CL, L; INTP, L) were to outrank EXH$_{PRWD}$ it would be optimal for the clitic to be placed further to the left, i.e. following *taj*, as in candidate (74b"). Note that the first and second tableau imply that the relative ranking of EXH$_{PHONP}$ and ALIGN(CL, L; INTP, L) is not crucial.

(74) Interaction between EXHAUSTIVITY and ALIGN$_{CL}$.

	EXH$_{PRWD}$	EXH$_{PHONP}$	ALIGN$_{CL}$
(a) ☞ [[A]$_{PRWD}$ [B]$_{PRWD}$ =CL]$_{PHONP}$		*	**
(b) [[A=CL]$_{PRWD}$ [B]$_{PRWD}$]$_{PHONP}$	*!		*

	EXH$_{PRWD}$	ALIGN$_{CL}$	EXH$_{PHONP}$
(a') ☞ [[A]$_{PRWD}$ [B]$_{PRWD}$ =CL]$_{PHONP}$		**	*
(b') [[A=CL]$_{PRWD}$ [B]$_{PRWD}$]$_{PHONP}$	*!	*	

	ALIGN$_{CL}$	EXH$_{PRWD}$	EXH$_{PHONP}$
(a") ☜ [[A]$_{PRWD}$ [B]$_{PRWD}$ =CL]$_{PHONP}$	**!		*
(b") ☞ [[A=CL]$_{PRWD}$ [B]$_{PRWD}$]$_{PHONP}$	*	*	

The partial rankings discussed so far are summarized in (75) and combine to give the ranking in (76) for clitic placement following the first PHONP.

(75) (a) *INITIAL(CL, INTP) >> ALIGN(CL, L; INTP, L) – from (72), (73);
(b) *INITIAL(CL, INTP) >> EXH$_{PRWD}$, EXH$_{PHONP}$ – from (79);
(c) EXH$_{PRWD}$ >> EXH$_{PHONP}$ (for clitic attachment to the first PHONP);
(d) EXH$_{PRWD}$ >> ALIGN(CL, L; INTP, L) – from (80).

(76) *INITIAL(CL, INTP) >> EXH$_{PRWD}$ >> EXH$_{PHONP}$, ALIGN(CL, L; INTP, L)

For clitic attachment to the first PRWD, as in example (71), the relative ranking of EXH$_{PHONP}$ and EXH$_{PRWD}$ is the reverse of (75c) which, combined with the other partial rankings in (75), gives the ranking in (77).

(77) *INITIAL(CL, INTP) >> EXH_{PHONP} >>
EXH_{PRWD} >> ALIGN(CL, L; INTP, L)

The rankings in (76) and (77) imply that the relationship between the two alternative clitic placements is a matter of re-ranking one EXHAUSTIVITY constraint with respect to the other. It is assumed that the ranking of the EXHAUSTIVITY constraints with respect to *INITIAL(CL, INTP) and ALIGN(CL, L; INTP, L) does not change. Therefore, because EXH_{PRWD} has to outrank ALIGN(CL, L; INTP, L) in (76), as illustrated in (74), this should also be the case in (77). This makes ALIGN(CL, L; INTP, L) the lowest ranked of the four constraints in (77) despite the fact that clitic attachment to the first PRWD will follow from any ranking of ALIGN(CL, L; INTP, L) relative to either EXHAUSTIVITY constraint.

Applying this principle in the opposite direction means that because EXH_{PHONP} is ranked above ALIGN(CL, L; INTP, L) in (77) then this should also hold in the alternative ranking allowing (76) to be restated as (78).

(78) *INITIAL(CL, INTP) >> EXH_{PRWD} >>
EXH_{PHONP} >> ALIGN(CL, L; INTP, L)

Ranking (78) corresponds to tableau (80), illustrating clitic placement after *taj čovek*, as in example (70a), repeated here as (79a). Likewise, tableau (81) corresponds to ranking (77), illustrating clitic placement after *taj*, as in example (71a), repeated as (79b).

(79) (a) Taj čovek =je čitao knjigu.
that man AUX.3.SG.PRES read.PASTP.M.SG book
'That man read a book.'
(b) Taj =je čovek čitao knjigu.
that AUX.3.SG.PRES man read.PASTP.M.SG book
'That man read a book.'

(80) Clitic attachment to the first PHONP

Input: *čitati*$_V$ (x, y); [past]; x = *taj čovek*$_{NP}$; y = *knjigu*$_{NP}$	*INIT	EX_{PW}	EX_{PP}	AL_{CL}
(a) [[Je= [taj]$_{PRWD}$ [čovek]$_{PRWD}$]$_{PHONP..}$]$_{INTP}$	*!		*	
(b) [[[Taj =je]$_{PRWD}$ [čovek]$_{PRWD}$]$_{PHONP..}$]$_{INTP}$		*!		*
(c) ☞ [[[Taj]$_{PRWD}$ [čovek]$_{PRWD}$ =je]$_{PHONP..}$]$_{INTP}$			*	**
(d) [[[Taj]$_{PRWD}$ [čovek =je]$_{PRWD}$]$_{PHONP..}$]$_{INTP}$		*!		**
(e) [..[[čitao]$_{PRWD}$ [knjigu]$_{PRWD}$ =je]$_{PHONP}$]$_{INTP}$			*	***!*

In tableau (80), candidate (a) incurs a fatal violation of the highest-ranked *INITIAL(CL, INTP) constraint. Candidate (b), yielding clitic attachment to

the first PRWD, is suboptimal because it violates EXH_{PRWD}, the higher ranking of the two EXHAUSTIVITY constraints. This constraint also eliminates candidate (d), showing that attachment to the second PRWD is unavailable as an analysis of clitic placement in this position. Despite being ranked lower than the other constraints, ALIGN(CL, L; INTP, L) is the deciding factor between the remaining candidates, (c) and (e). Its role is to reject any candidate such as (e) in which the clitic is attached to any but the first PHONP. This leaves (c) as the optimal candidate.

Tableau (81) illustrates the situation when the EXHAUSTIVITY constraints are re-ranked.

(81) Clitic attachment to the first PRWD

Input: *čitati*$_{\text{V}}$ (x, y); [past]; x = *taj čovek*$_{\text{NP}}$; y = *knjigu*$_{\text{NP}}$	*INIT	EX_{PP}	EX_{PW}	AL_{CL}
(a) [[Je= taj]$_{\text{PRWD}}$ [čovek]$_{\text{PRWD}}$]$_{\text{PHONP}}$..]$_{\text{INTP}}$	*!		*	
(b) ☞ [[[Taj =je]$_{\text{PRWD}}$ [čovek]$_{\text{PRWD}}$]$_{\text{PHONP}}$..]$_{\text{INTP}}$			*	*
(c) [[[Taj]$_{\text{PRWD}}$ [čovek]$_{\text{PRWD}}$ =je]$_{\text{PHONP}}$..]$_{\text{INTP}}$		*!		**
(d) [[[Taj]$_{\text{PRWD}}$ [čovek =je]$_{\text{PRWD}}$]$_{\text{PHONP}}$..]$_{\text{INTP}}$			*	**!
(e) [..[[čitao =je]$_{\text{PRWD}}$ [knjigu]$_{\text{PRWD}}$]$_{\text{PHONP}}$]$_{\text{INTP}}$			*	**!*

Candidate (a) fatally violates *INITIAL(CL, INTP). Candidate (c), the winner in tableau (80), is now suboptimal because it incurs a fatal violation of the higher ranked of the two EXHAUSTIVITY constraints. The other candidates, all of them instances of clitic attachment to a PRWD, fare equally well with regard to EXH_{PRWD}, incurring one violation each. Thus the decision again falls to the ALIGN(CL, L; INTP, L) constraint, of which candidate (b) incurs the least violations.

Finally, for sentences with multiple INTPs such as (49), repeated as (82a), the rankings in (77) and (78) cannot distinguish between this and the ungrammatical (82b). The prosodic structure indicated reflects ranking (78), for clitic attachment to the first PHONP, but an analogous state of affairs results from ranking (77).[19]

(82) (a) [Moja sestra]$_{\text{INTP}}$, [koja je u Sarajevu]$_{\text{INTP}}$, [[[sećа]$_{\text{PRWD}}$
My sister who is in Sarajevo remembers
=vas =se]$_{\text{PHONP}}$]$_{\text{INTP}}$.
PRN.2.PL.ACC REFL
'My sister, who is in Sarajevo, remembers you.'

[19] I assume that GEN does not produce candidates in which main clause material is placed within subordinate clauses, ruling out placement of the clitic cluster *vas se* within the non-restrictive relative clause *koja je u Sarajevu*.

(b) * [[[Moja]$_{PRWD}$ [sestra]$_{PRWD}$ =vas =se]$_{PHONP}$]$_{INTP}$, [koja
My sister PRN.2.PL.ACC REFL who
je u Sarajevu]$_{INTP}$, [[[sećа]$_{PRWD}$]$_{PHONP}$]$_{INTP}$.
is in Sarajevo remembers

In the grammatical example clitic placement is within the same INTP as the verb to which the clitics are related. This can be captured by means of a constraint which 'associates' the clitics with the relevant VP and which is motivated by Romance languages, among others, in which the high ranking of this constraint compared to other clitic alignment constraints like ALIGN(CL, L; INTP, L) results in VP-aligned clitics. Such a constraint is ALIGN$_{CL/VP}$, as defined in (83).

(83) Clitic/VP Alignment Constraints (ALIGN$_{CL/VP}$)
(a) ALIGN(CL, L; VP, L)
(b) ALIGN(CL, R; VP, R)

In BCS, however, ALIGN$_{CL/VP}$ is ranked lower than ALIGN(CL, L; INTP, L) reflecting the fact that INTP, not VP, is the domain of cliticization.

The interaction of ALIGN$_{CL/VP}$ with the other constraints in (78) is shown in tableau (84) for the examples in (82). Again, ranking (77) would have a similar outcome. Neither candidate violates the higher ranked constraints, *INITIAL(CL, INTP) and EXH$_{PRWD}$, which are omitted.

(84) Interaction of AL$_{CL/VP}$ with ranking (84)

Input: *sećati se*$_V$ (x, y); [PRES]; x = *moja sestra*…$_{NP}$; y = [PRN.2.PL]	EX$_{PP}$	AL$_{CL}$	AL$_{CL/VP}$
(a) ☞ [Moja sestra]$_{INTP}$, [koja je u Sarajevu]$_{INTP}$, [[[sećа]$_{PRWD}$ =vas =se]$_{PHONP}$]$_{INTP}$	*	*	
(b) [[[Moja]$_{PRWD}$ [sestra]$_{PRWD}$ =vas =se]$_{PHONP}$]$_{INTP}$, [koja je u Sarajevu]$_{INTP}$, [sećа]$_{INTP}$	*	*	*!*

Both candidates violate EXH$_{PHONP}$ as the clitic cluster in each case is immediately dominated by PHONP. Because this tableau compares clitic placement in different INTPs, violation of ALIGN(CL, L; INTP, L) is not considered on the basis of gradience as it would be for placement in different positions within the same INTP. Thus (a) and (b) each incur one violation of ALIGN(CL, L; INTP, L). This leaves the issue to be decided by ALIGN$_{CL/VP}$. In this case violation can be considered on the basis of gradience since placement with respect to the same VP is being considered for both candidates. Candidate (b) incurs two violations, because two PRWDs, *koja =je* and *u= Sarajevu*, intervene between the clitics and the VP. In candidate (a), the winner, there are no intervening PRWDs. This result shows again

how a low-ranked constraint, one that might have been considered inactive in a language like BCS which lacks VP clitics, can be important in deciding an optimal candidate.

Having attributed the alternation in BCS enclitic placement to variable ranking of EXH$_{PRWD}$ and EXH$_{PHONP}$ with respect to each other the following is a brief discussion of how such a grammar might be organized.

Anttila (1997: 46) proposes that OT grammars can be partially ordered. For instance, a constraint ranking such as (78), repeated below as (85), which gives clitic attachment to the first PHONP, is a total order which subsumes the individual rankings in (86).

(85) *INITIAL(CL, INTP) >> EXH$_{PRWD}$ >> EXH$_{PHONP}$ >> ALIGN(CL, L; INTP, L)

(86) *INITIAL(CL, INTP) >> EXH$_{PRWD}$
*INITIAL(CL, INTP) >> EXH$_{PHONP}$
*INITIAL(CL, INTP) >> ALIGN(CL, L; INTP, L)
EXH$_{PRWD}$ >> EXH$_{PHONP}$
EXH$_{PRWD}$ >> ALIGN(CL, L; INTP, L)
EXH$_{PHONP}$ >> ALIGN(CL, L; INTP, L)

A partial order arises when the grammar does not rank a number of constraints with respect to each other. This is the case if the ranking EXH$_{PRWD}$ >> EXH$_{PHONP}$ is not present in the grammar. Such a grammar would then correspond to both tableaux (80) and (81) thereby allowing the observed variation.

5. CONCLUSION

This article presents a modified view of Anderson's (1996, 2000) phrasal affixation approach to cliticization, particularly with respect to BCS second position enclitics. The second position alternation in clitic placement in these languages is accounted for in terms of the prosodic characteristics of both the clitics and their hosts. The interaction between the morphological process of phrasal affixation (cliticization) and prosodic structure is mediated through OT. Second position placement of clitics results from a competition in which a constraint requiring left edge placement of the clitics is outranked by a constraint banning initial placement of the clitics. The precise nature of the element in first position falls out from competition between two constraints on prosodic structure, one disallowing attachment of clitics to PRWD, the other disallowing attachment to PHONP. Alternating clitic placement in BCS follows from the re-ranking of these constraints on prosodic structure.

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