Working Papers of the Cornell Phonetics Laboratory
2002, vol. 14, pp. 207-249

On the Prosodic Status of Function Words*

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In this paper, I argue for a bifurcation of function words in standard Serbian into the free and bound class. I further argue that, while the properties of the free class are to be captured by a general set of prosodic constraints, which account for both lexical elements and free functional elements, the status of bound function words, or clitics, calls for a different approach. If constraints were asked to distinguish between the two classes of function words, this would obviously call for class specific constraints. My proposal is to prespecify clitics as prosodic affixes, associating their lexical entries with prosodic subcategorization frames. The full burden of the distinction between free and bound function words is thus placed on prosody, and implemented through lexical prespecification. This accounts both for cases of distributional overlap between free and bound function words, and those in which distributions of the two classes diverge. In sum, I opt here for prosodic prespecification as the most natural, and least cumbersome, solution.

A crucial aspect of the morphology/prosody interface is the inclusion of morphosyntactic elements into the prosodic hierarchy. Optimally, a morphosyntactic element is included into the prosodic hierarchy by assuming the status of a prosodic word. But while words of lexical categories strongly correlate with the prosodic word status, forming a uniform prosodic class, members of functional categories exhibit a much more erratic pattern cross-linguistically, generally corresponding to more than one prosodic type, as noted in Selkirk (1984, 1995b), Inkelas and Zec (1993), Peperkamp (1997). The central problem to be addressed here is the formal characterization of prosodic distinctions within the class of functional categories.

In a recently proposed solution to this problem, Selkirk (1995b) analyzes all prosodic differences among English words, including those among distinct prosodic types within the functional class, by positing a single set of ranked constraints. Under this analysis, different prosodizations of functional elements directly follow from differences in their syntactic distribution. However, what is proposed to be straightforward correlation between a function word's prosody and its syntactic distribution does not hold generally. No such correlation is found in the case that serves as a basis of our study, that

* I am grateful to Abby Cohn, Molly Diesing, Yoshi Dobashi, and Eungyeong Kang for enlightening discussions of the issues presented in this paper, as well as for invaluable comments and criticisms of its earlier versions.

of standard Serbian,[1] in which words of functional category correspond to two prosodic classes, free function words on the one hand, and bound function words, or clitics, on the other. While both free and bound function words exhibit a measure of prosodic deficiency, only members of the former class can, under certain conditions, be matched with the prosodic word status. In contrast, the class of bound function words is characterized by complete absence of prosodic salience: the only prosodic status members of this class can assume is that of a prosodic affix. Significantly, the two classes of function words in standard Serbian exhibit a considerable overlap in their syntactic distributions; this case thus calls for an analysis that differs in crucial ways from that presented in Selkirk's (1995b) account of the prosody of function words in English.

In this paper I argue that the two prosodic asymmetries in standard Serbian, the asymmetry between words of lexical and functional categories, and between the two prosodic classes of functional elements, cannot be captured by a single formal mechanism. One of the two functional classes will need to be lexically designated, and the natural candidate is the class of bound function words, which are laden with idiosyncrasies, and exhibit affix-like properties. This solution, I will argue, is superior to alternatives which involve constraints sensitive to subclasses of function words, or even individual morphemes. We first identify the subset of the phenomenon that does exhibit unified prosodic behavior: the prosodic properties of lexical elements and those belonging to the class of free function words can be captured by a single set of ranked constraints. The class of bound function words, however, will have to be represented directly in the lexicon, by invoking prespecification, in the spirit of Inkelas, Orgun and Zoll (1997).

The account to be presented is cast in Optimality Theory (McCarthy and Prince 1993a, Prince and Smolensky 1993), and the paper is organized as follows: Section 1 presents the general prosodic framework, and the prosodization of lexical elements, while

[1] This corresponds to what used to be the eastern standard of Serbo-Croatian, which is subsumed under the Neo-/tokavian dialect. This general dialect, subdivided into a number of regional idioms, overlaps with both the Serbian and Croatian speech areas (cf. IviÊ 1958). More closely, the idiom described here is that spoken in Belgrade (cf. MiletiÊ 1952), and is one of several standard Serbian idioms. This detailed

sections 2 and 3 deal with the prosodic characteristics of the free and bound functional elements, respectively. Sections 4 and 5 provide further arguments for the prosodic classification into free and bound function words, coming from the distribution of pitch accent and its interactions with focus. Section 6 addresses a special case of relatedness between these two prosodic classes, and the conclusion is presented in section 7.

1. Preliminary remarks

The prosodic status of morphosyntactically independent elements is regulated by the following constraint, which belongs to the alignment family (McCarthy and Prince 1993b, Selkirk 1986, 1995b), with MWord standing for morphological word, and PWord for prosodic word:

(1) PWORDALIGNMENT:

Align L/R edges of a MWord with L/R edges of a PWord.

The most direct indicator of the prosodic word status in standard Serbian is the realization of a MWord's pitch accent. Each morphological element is associated with pitch accent.[2] As an indicator of prosodic prominence, pitch accent is realized solely within the prosodic hierarchy, and specifically, within prosodic words.

The constraint in (1) has in its domain of influence all morphosyntactically independent elements, that is, both members of the lexical and functional classes. However, as will be shown, lexical and functional elements do not fare alike with respect to this constraint. While a lexical element invariably abides by this constraint, and is thus invariably granted the prosodic word status, elements belonging to the functional class exhibit a more varied pattern: they may violate (1) due to higher prosodic pressures, as detailed in sections 2 and 3. It is thus necessary to single out lexical elements as

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characterization is necessary because any discussion of prosody requires a narrow delimitation of the linguistic idiom.

[2] For the distribution of pitch accent within words, and its interactions with the morphological constituency, see Zec (1993, 1999).

recipients of the prosodic word status, as expressed by the following, undominated, constraint, where MWord$_{lex}$ stands for the class of lexical elements:

(2) MWORD$_{LEX}$: MWord$_{lex}$ corresponds to a pitch accented PWord.

This constraint captures the asymmetry between lexical categories on the one hand, and functional categories, on the other. It is ensured, by virtue of this constraint's undominated status, that any constraint interactions leading to diversity in prosodic status will only affect functional categories.

Thus, any MWord that corresponds to a PWord will be included into the prosodic hierarchy, which is the locus of prominence relations within utterances. We will characterize, briefly, the prominence relations in standard Serbian, which are fully compatible with the patterns already established in the literature; in particular, the pattern of interactions between nuclear prominence and focus (Chomsky and Halle 1968, Jackendoff 1972, Selkirk 1995a, Truckenbrodt 1995).

The locus of prominence relations is the prosodic constituency, given in (3) (Nespor and Vogel 1986, Selkirk 1978, 1980, Hayes 1989, Inkelas and Zec 1995).

(3) The Prosodic Hierarchy

utterrance
intonational phrase
prosodic phrase
prosodic word

According to Selkirk (1995b:443), prosodic constituency is regulated by a set of architectural constraints on prosodic structure, listed in (4):

(4) Constraints on Prosodic Domination
(where C^n = some prosodic category)

a. LAYEREDNESS	No C^i dominates a C^j, j > i
b. HEADEDNESS	Any C^i must dominate a C^{j-1}
c. EXHAUSTIVITY	No C^i immediately dominaets a constituent C^j, j< i-1
d. NONRECURSIVITY	No C^i dominats C^j, j =1

Two of the architectural constraints, LAYEREDNESS and HEADEDNESS, which prohibit prosodic level reversals and level skipping, respectively, serve to define the nature of this representation, and as such are undominated. EXHAUSTIVITY and NONRECURSIVITY, however, capture those aspects of the prosodic constituency that are subject to variation, and thus may be violated; cases of violations of these constraints will be presented in sections 3 and 4.

Prominence is expressed by virtue of the head relation within the prosodic constituency. Given the prosodic hierarchy in (3), a prosodic constituent's head is characterized as an alignment relationship: the head of a prosodic constituent is generally aligned with one of its edges. In standard Serbian, it is the right edge that is relevant, as expressed in (5), following McCarthy and Prince (1993b) and Truckenbrodt (1995:26).

(5) PHEADALIGNMENT: Align (PConstituent, R, H(PConstituent), R)

Prominence relations within prosodic constituents will be captured by metrical grids (Prince 1983): a PWord, or rather, its most prominent syllable, the one bearing the pitch accent, has to be associated with an *x* mark, as dictated by constraint (6). And, the prominence of a prosodic head is designated by a highest grid column within its domain, as stated in (7). Both constraints (6) and (7) are undominated.

(6) PWORDPROMINENCE:
Every PWord possesses an *x*-mark on its pitch accented syllable.

(7) PHEADPROMINENCE:
Head of a prosodic constituent has a higher *x* column than a non-head.

Taking the example in (8), which contains only words of lexical categories, we demonstrate how the proposed constraints regulate prominence relations. In (8), each prosodic word is marked for pitch accent, using the traditional accent diacritics. A vowel, here designated as *v*, may be accented as: *v̏* (short falling), *v̂* (long falling), *v̀* (short rising), and *v́* (long rising).[3]

(8)

```
                                        x
                    x                   x
    x               x           x       x
[ [ [jèdna]PW  [lásta]PW ]PPh  [[ne Éini]PW  [pròleÊe]PW ]PPh ] IPh
  one           swallow        not make     spring
   'A swallow does not a spring make.'
```

The prominence structure in (8) satisfies both PWORDPROMINENCE and PHEADPROMINENCE, stated as (6) and (7) above: each prosodic word has an *x* mark associated with its pitch accented syllable, and prosodic heads are designated by the height of the *x* column. This structure also satisfies PHEADALIGNMENT in (5): in each prosodic phrase, its rightmost prosodic word, which acts as its head, has the highest *x* level. And the extra grid mark on the rightmost prosodic word designates the head status of the rightmost prosodic phrase within the intonational phrase. We have not marked the utterance level, which includes a single intonational phrase.[4]

The presence of focus has immediate consequences for prominence relations in utterances. Focus is introduced in the syntax, as a marking on syntactic constituents (Jackendoff 1972, Selkirk 1995a, Rooth 1995, and the references therein). Crucially, the focused constituent includes highest prominence, as stated in (9)

[3] Arguments for decomposing the traditional diacritics are presented in Browne and McCawley (1965). In Inkelas and Zec (1988), Zec (1993, 1999), the traditional diacritics are decomposed into tone and stress. The traditional diacritics will suffice for the present purposes, since all that is relevant is the locus of pitch accent in a prosodic word. Note also that the form *ne Éini* in (8) corresponds to a single morphological word; it contains the negative prefix *ne* which is traditionally separated in the orthography.

[4] An additional constraint needs to be posited, one that prevents gratuitous assignment of *x* marks, and would penalize any candidate which has more *x* marks than (8).

(Truckenbrodt 1995: 97), and by virtue of this, becomes the prosodic head. In all cases to be considered here, the focus domain, DF, will correspond to the entire sentence.

(9) FOCUS:

If F is a focus and DF is its domain, then the highest prominence in DF will be within F.

In (10), where the domain of the focus is the entire sentence, the focused constituent bears the highest level of prominence within the entire intonational phrase as well.

(10)

x
x x
x x x x
[[[**jèdna**$_{F}$]$_{PW}$ [lásta]$_{PW}$]$_{PPh}$ [[ne ĥni]$_{PW}$ [pròleĥe]$_{PW}$]$_{PPh}$]$_{IPh}$
one swallow not make spring
'*One* swallow does not a spring make.'

The tableau in (11) shows that FOCUS ranks higher than PHEADALIGNMENT: a focused constituent, rather than the rightmost one, satisfies PHEADPROMINENCE by bearing highest prominence.

(11) FOCUS >> PHEADALIGNMENT

[[[**jèdna**$_{F}$]$_{PW}$ [lásta]$_{PW}$]$_{PPh}$	FOCUS	PHEADALIGNMENT
! x x x ☞ ! [[[**jèdna**$_{F}$]$_{PW}$ [lásta]$_{PW}$]$_{PPh}$		*
x x x [[[**jèdna**$_{F}$]$_{PW}$ [lásta]$_{PW}$]$_{PPh}$	*!	

In this section we have presented the basic principles for characterizing prominence relations in Serbian utterances. As long as the utterance contains only prosodic words which correspond to $MWord_{lex}$, as is the case in (8), those prominence relations are of the sort standardly observed in the literature. Function words introduce two types of departures from this pattern. In section 2, we turn to the prosodic properties of free function words, and in section 3, to the bound class.

2. Free functional elements

Unlike members of lexical categories, which invariably receive the prosodic word status, free functional elements do so only under limited circumstances. Whether a free functional element will become a prosodic word crucially depends on its size: disyllabic function words are matched with prosodic words, but those corresponding to a single syllable are not. As in the case of lexical elements, the prosodic word status is diagnosed by pitch accent prominence. Free function words exhibit yet another prosodic deficiency: they are not eligible for the prosodic head status. Both these deficiencies are overridden by the agency of focus.

Consider the sets of examples in (12) and (13), placed in the same context. The prosodic phrases in (12) contain a functional element in phrase initial position. Based on the distribution of pitch accent, we see that only the disyllabic function word in (12a) is matched with a prosodic word, while the monosyllabic one in (12b) remains without a prosodic status, and is directly included into the prosodic phrase.[5] In each case, the head of the prosodic phrase corresponds to the rightmost prosodic word, and possesses the highest *x* column, in accordance with PHEADPROMINENCE, stated in the previous section.

[5] This phenomenon is observed in the traditional literature, most notably, in the descriptions of regional dialects, and is characterized as deaccenting (e.g., IviĈ et al, 1994). While monosyllabic words are regularly deaccented, occasional daccentuation of polysyllabic free function words has also been observed. Deaccenting is also observed in the studies of poetic meter: unlike lexical monosyllables, which are prohibited from strong metrical positions, monosyllabic free function words may occur in both weak and strong positions of the meter. Polysyllabic free function words pattern with lexical polysyllables: their pitch accented syllables are incompatible with weak metrical positions. This pattern, described in Taranovski (1954) and Kojen (1996), is characteristic for both iambic and trochaic verse.

(12) This blue building is …

a.

```
                x
    x           x
[[nȁću]PW  [pózorište]PW ]PPh        ‘our theater’
our(neut)      theater
```

b.

```
          x
[ naš  [stûdio]PW ]PPh               ‘our studio’
our(masc) studio
```

Note that the monosyllabic element in (12b), which is included directly into the prosodic phrase, incurs a violation of EXHAUSTIVITY, stated in (4c), which obviously ranks lower than PWORDSIZE.

In (13), the prosodic phrases include only lexical elements, which invariably become prosodic words by virtue of MWORD$_{LEX}$, stated in (2). Thus, the fact that the phrase initial word in (13b) contains only one syllable, while the one in (13a) contains two, in no way affects the prosodic status of these morphological words. Heads of the prosodic phrases in (13a) and (13b) correspond again to the rightmost prosodic words.

(13) This blue building is …

a.

```
                x
    x           x
[[nòvo]PW  [pózorište]PW ]PPh        ‘(a) new theater’
new(neut)      theater
```

b.

```
              x
    x         x
[[nòv]PW  [stûdio]PW ] PPh           ‘(a) new studio’
new(masc)  studio
```

The contrast in (12) calls for a constraint that favors disyllabic prosodic words over the monosyllabic ones, as stated in (14):[6]

(14) PWORDSIZE: A PWord is minimally disyllabic.

By ranking this constraint above PWORDALIGNMENT, as in tableau (15), we obtain the right result: function words are promoted to the prosodic word status if they possess a certain minimal size, as in (15b). Subminimal function words receive no prosodic status, as in (15a), and are included directly into the prosodic phrase, in violation of EXHAUSTIVITY.

(15) PWORDSIZE >> PWORDALIGNMENT

a. naó	PWORD SIZE	PWORDALIGN
☞ naó!		*
[nàó!^]$_{PW}$!!	* !	
b. naóf		
naóf		* !
☞ [nàóf!^]$_{PW}$!!		

And, by ranking MWORD$_{LEX}$ above PWORDSIZE, as in (16), we capture the fact that lexical elements are immune to the size requirement; that is, they are invariably granted the prosodic word status.

(16) MWORD$_{LEX}$ >> PWORDSIZE

nov	MWORD$_{LEX}$	PWORDSIZE	PWORDALIGN
☞ [nòv]$_{PW}$		*	
nov	* !		*

[6] This disyllabicity requirement for conferring the prosodic word status on function words is reminiscent of the situation in Japanese. Itô (1990) establishes a disyllabic minimality requirement for the prosodic word in Japanese which, however, does not hold across the board but targets only morphologically derived forms.

In sum, we note a significant prosodic difference between monosyllabic and polysyllabic function words when they immediately precede a lexical element. The same size effect obtains when a function word follows a lexical element, as illustrated in (17)-(18). In the two examples, occurring after near identical context sentences, the rightmost prosodic phrase has a function word in final position: the monosyllabic form *njim* in (17), and the disyllabic form *njima* in (18).[7]

(17) So, the director is impressed with the new actor?

x

Ne, nije viće [[impresiòniran]$_{PW}$ njim]$_{PPh}$
No is not more impressed (with) him(Instr)
'No, he is no longer impressed with him.'

(18) So, the director is impressed with the new actors?

x
x x

Ne, nije viće [[impresiòniran]$_{PW}$ [nj̑ima]$_{PW}$]$_{PPh}$
No is not more impressed (with) them (Instr)
'No, he is no longer impressed with them.'

Again, the disyllabic function word in (18) is matched with a prosodic word, while the monosyllabic function word in (17) is not.[8]

The example in (18) illustrates another important difference in the prosodic behavior of lexical and functional elements: they differ in their readiness to assume the head status within prosodic constituents. This is demonstrated by comparing the rightmost prosodic phrases in (18) and (19): the phrase-final prosodic word *Petrom* acts as the prosodic head in (19), which is not the case with its counterpart *njima* in (18).

[7] The pronominal argument in (17)-(18) is in the instrumental case. This is relevant because, while genitive, dative, and accusative pronouns have both clitic and non-clitic forms, the instrumental pronoun has a single form which corresponds to a free function word. The effect illustrated in (17) - (18) does not extend to pronominal arguments which have clitic counterparts. This issue is addressed in section 6.

[8] In both (17) and (18), as well as in (19), the highest prominence is in the first half of the utterance, with the negated auxiliary *nije* bearing the highest prominence.

However, there is no discourse difference between (18) and (19) that would warrant the difference in the prosodic head status.

(19) So, the director is impressed with the new actor? [the actor's name is Peter]

```
                        x
                x       x
Ne, nije viće [ [ impresiòniran]PW [Pȅtrom]PW ]PPh
No is not more impressed (with) Peter (Instr)
'No, he is no longer impressed with Peter.'
```

In sum, while lexical elements readily act as bearers of higher levels of prominence, functional elements shun this prosodic role. This is expressed by the following constraint, which mandates that only elements belonging to the MWord$_{lex}$ class may act as bearers of head prominence:

(20) PHEAD = MWORD$_{LEX}$
PWord with the prosodic head status must correspond to a MWord $_{lex.}$

Failure of the prosodic phrase final prosodic word in (18) to assume the head status is captured by ranking PHEAD = MWORD$_{LEX}$ above PHEADALIGNMENT, stated in (5) above. Due to this ranking, stated in (21), PHEAD = MWORD$_{LEX}$ is satisfied in (18) by violating PHEADALIGNMENT.

(21) PHEAD = MWORD$_{LEX}$ >> PHEADALIGNMENT

The two prosodic deficiencies of free function words are overridden by the association with focus. Any focused function word corresponds to a prosodic word regardless of the number of syllables it contains, and can act as the prosodic head, as shown by the examples in (22), whose prominence structure is laid out in (23).

(22) a. **Nȁće**$_{F}$ pozorićte svi hvale (ne njihovo).
Our$_{F}$ theater everyone praises (not theirs).

b. **Nȁó**$_{F}$ studio svi hvale (ne njihov).
Our$_{F}$ studio everyone praises (not theirs).

(23)

x
x x
x x x x

a. [[**nȁće**$_{F}$]$_{PW}$ [pózorićte]$_{PW}$]$_{PPh}$] [[svi]$_{PW}$ [hvale]$_{PW}$]$_{PPh}$
Our$_{F}$ theater everyone praises (not theirs).

x
x x
x x x x

b. [[**nȁó**$_{F}$]$_{PW}$ [stûdio]$_{PW}$]$_{PPh}$ [[svi]$_{PW}$ [hvale]$_{PW}$]$_{PPh}$

We therefore enforce the prosodic word status for any *F*-marked morphosyntactic element, as stated in constraint (24), which coordinates the interface between syntax and prosody.

(24) MWORD$_{F}$:
Any *F*-marked MWord constitutes a PWord.

As noted in section 1, focus is assigned in the syntactic component, and only interpreted in the prosodic component. This is accomplished by constraint (24), which is of the interpretative sort: it assigns the special prosodic status to any element associated with the focus in the syntactic component. By ranking this constraint above PWORDSIZE, as in (25), we insure that the prosodizing of a focused word is independent of its size, or of its morphological status, for that matter.

(25) MWORD$_{F}$ >> PWORDSIZE

Moreover, due to the FOCUS constraint in (9), a focused function word assumes the additional role of a prosodic head. That is, FOCUS overrides PHEAD = MWORD$_{LEX}$, as stated in (26):

(26) FOCUS >> PHEAD = MWORD $_{LEX}$

To conclude, a free function word receives the prosodic word status if it is minimally disyllabic; and if monosyllabic, it is included directly into the prosodic phrase, incurring a violation of EXHAUSTIVITY. The size constraint on prosodic words does not affect lexical elements or focused morphological words, as shown in the ranking in (27):

(27) MWORD$_{LEX}$ MWORD$_F$
PWORDSIZE
EXHAUSTIVITY PWORDALIGN

The ranking in (28) shows the overall interactions between constraints pertaining to prosodic words and those pertaining to higher level prominence within the prosodic hierarchy.

(28) MWORD$_{LEX}$ MWORD$_F$ FOCUS
PWORDSIZE PHEAD = MWORD $_{LEX}$
EXHAUSTIVITY PWORDALIGN PHEADALIGNMENT

We now turn to the class of bound function words, or clitics, whose prosodic properties radically depart from those of the free function word class.

3. Bound Functional Elements, or Prosodic Affixes

Bound functional elements, or clitics, form a distinct prosodic class, differing in crucial ways from free function words. The set of general constraints that regulates the

prosody of morphosyntactic elements, presented in (28), while capturing the prosody of free function words, does not extend to the prosodic properties of bound functional elements. Two types of evidence bring this into relief: cases of complementary distribution between bound and free function words, and cases in which the distributions of the two classes of functional elements overlap. A case of the former type is presented in this section, while cases of the latter type are presented in sections 4 and 5. On the basis of this evidence, I argue for different prosodic representations of the two classes of function words. In this section, I will argue that the properties of bound function words, or clitics, are best captured by representing them as prosodic affixes, with a recursive prosodic representation, and focus on the issue of how this representation is to be encoded into the prosodic grammar of standard Serbian.

Bound function words, or clitics, will be represented here as prosodic affixes, with subcategorizaton frames listed in their lexical entries. As shown in (29)-(30), the subcategorization frames specify the prosodic host, and the direction of attachment. Clitics attach to a prosodic host, in particular, to a prosodic word, as either proclitics, as in (29), or as enclitics, as in (30), forming a recursive prosodic word structure (as proposed in Inkelas 1989, Zec and Inkelas 1990).

(29) Proclitics

u	preposition	[__ [ ]$_{PW}$]$_{PW}$	[u [pozoristu]$_{PW}$]$_{PW}$	'in (the) theater'
ni	particle	[__ [ ]$_{PW}$]$_{PW}$	[ni [pozoriste]$_{PW}$]$_{PW}$	'nor (the) theater'

(30) Enclitics

ga	pronoun	[[ ]$_{PW}$ __]$_{PW}$	[[vidi]$_{PW}$ ga]$_{PW}$	'sees him'
je	auxiliary	[[ ]$_{PW}$ __]$_{PW}$	[[video]$_{PW}$ je]$_{PW}$	'saw'

The distributional and prosodic peculiarities of clitics, to be detailed below, lend crucial support to the recursive representation in (29)-(30).

As already noted, evidence for representationally distinguishing bound function words, that is, clitics, from the free class comes from their distribution. In order to present a case of complementary distribution between free and bound function words, we focus

on enclitics, which have a highly restricted syntactic distribution, much more restricted in fact than the free elements with the same morphosyntactic status. Enclitics may only occupy the so-called second sentential position: either following the first constituent, or the first word. In (31a) the clitic *je* occurs after the first constituent *plava kuÊa*, and in (31b), after the first word, *plava*.[9] (Clitics are italicized, and the direction of attachment is marked informally by the = sign.)

(31) a. Plava kuÊa=*je* neobiÉno lepa.
blue house is-CL unusually beautiful
'The blue house is unusually nice.'
b. Plava=*je* kuÊa neobiÉno lepa.
blue is- CL house unusually beautiful
'The blue house is unusually nice.'

While clitic positioning is generally governed by both prosodic and syntactic factors, the positioning after the first word, in (31b), is subject primarily to prosodic control.

The positioning of enclitics after the first word has been characterized in the literature as attachment to a domain-initial prosodic word. The attachment itself is prosodic, as argued in Halpern (1992) and Inkelas and Zec (1990). The relevant domain will roughly be equated here with a clause.[10] The issue of central interest is what

[9] Both prosodic and syntactic principles are relevant for the characterization of clitic placement, as claimed in Halpern (1992), BoÆkoviÊ (1996, 2000) and Zec and Inkelas (1990). Clitics are thus the prime case of an interface phenomenon: analyses which are purely syntactic (Progovac 1996, Wilder and Ć avar 1994, Ć avar and Wilder 1996), or those that are purely prosodic (RadanoviÊ-KanziÊ 1996), fail to capture all relevant aspects of this complex phenomenon (for arguments, see BoÆkoviÊ 2000).

[10] While equating the domain of enclitic placement with a clause should be sufficient for our purposes, this domain would most likely need to be characterized both syntactically and prosodically since neither characterization alone can give the right result. RadanoviÊ-KanziÊ (1996) and BoÆkoviÊ (1996, 2000) claim that the domain of enclitic placement is purely prosodic, corresponding to the intonational phrase. This is motivated by the so-called third position clitics: the constituent that serves as first for enclitic placement can optionally be preceded by another, typically heavy, constituent. This case can be explained if the domain corresponds to an intonational phrase, and the constituent excluded from the domain itself forms an intonational phrase. However, this analysis does not explain cases of two clauses that correspond to a single intonational phrase, yet have two positions for clitics; or cases where a clause is split by an intonational phrase boundary, yet the clitic cluster is not split. Moreover, as argued in Zec and Inkelas (1990), the heavy constituent excluded from the clitic placement domain has to correspond to a prosodic phrase, but not necessarily to an intonational phrase.

material, if any, can intervene between the first prosodic word that serves as an enclitic host and the domain's left edge. It will be shown that the domain initial prosodic word counts as first even when preceded by a proclitic, that is, a bound functional element. Any other morphosyntactic element, including a free function word, is prohibited in this position.

In (31b), the leftmost prosodic word is perfectly aligned with the left edge of the relevant domain, as shown in (32):

(32) $[_{D}$ [[Plava]$_{PW}$ je$_{cl}$]$_{PW}$ kuêa neobiéno lepa.

While, of course, no prosodic word may intervene, a monosyllabic function word which, as we saw in section 2, has no prosodic status, may not intervene, either:

(33) a.*Mi plavu=*smo* kuêu veê videli.
we blue Aux-CL house already saw
b. $[_{D}$ [mi [[plavu]$_{PW}$ smo]$_{PW}$ [kuêu]$_{PW}$]$_{PPh}$ veê videli

However, a proclitic may precede an enclitic host, as in (34):

(34) a. *O*=plavoj=*smo* kuêi veê éuli.
Of blue Aux-CL house already heard
'We already heard about the blue house'
b. $[_{D}$ [[o [plavoj]$_{PW}$]$_{PW}$ smo]$_{PW}$ kuêi veê éuli

The contrast between (33) and (34) is explained by different representations of monosyllabic free function words on the one hand, and proclitics, on the other. In (34), but not in (33), the first prosodic word perfectly aligns with the left edge of the relevant domain, due to the recursive structure imposed by the two clitics hosted by *plavu*, as in

(34b).[11] In sum, proclitics blend with the first prosodic word, while monosyllabic free function words do not, and this is fully captured by their distinct representations.

The representation of clitics proposed here also explains the phenomenon of clitic stacking. More than one enclitic, or proclitic, may attach to the same host, as shown in (35) and (36), respectively.

(35) a. Plavu=*nam*=*je* kuêu veÊpokazao.
blue us- CL Aux- CL house already showed
'He already showed us the blue house.'

b. $[_{D}$ [[[plavu] $_{PW}$ nam]$_{PW}$ je]$_{PW}$ kuêu veÊpokazao

(36) a. *A*=*o*=plavoj=*smo* kuêi veÊéuli.
But about blue Aux-CL house already heard
'But we already heard about the blue house'

b. $[_{D}$ [[a [o [plavoj]$_{PW}$]$_{PW}$ smo]$_{PW}$ kuêi veÊéuli

Clitic stacking follows from the recursive representation proposed here for clitics. Due to recursive prosodic word structure, the leftmost prosodic word can serve as "first" for any number of enclitics, since each enclitic is attached to a first prosodic word. If enclitics were characterized as following the first morphological word, then any enclitic after the first one in the row would no longer be in the second position. But the prosodic characterization of clitic attachment, and the recursiveness of prosodic word structure, obviates this problem. Likewise, the leftmost prosodic word can serve as "first" regardless of the number of proclitics it hosts. In order to account for the phenomenon of clitic stacking, BoćkoviÊ (1996) (also, 2000) has to resort to a morphological merger between the clitic and its host. In the present proposal, clitic stacking follows from the representation itself.

In sum, distinct representations for free and bound function words are necessary for encoding differences in their prosody, while allowing for overlapping distribution. We show next that no useful morphosyntactic correlates can be established for the

[11] Some interpretation is called for here: it is regularly the outermost prosodic word that counts.

proposed subclassification of function words, which strongly suggests that this distinction is of purely prosodic nature.

We saw in section 2 that the prosodic status of a free function word crucially depends on its size: it becomes a prosodic word if it is minimally disyllabic. Clitics, however, may have one or more syllables, or may correspond to a single, non-syllabic, consonant (such as *s* 'with' and *k* 'to'). In (37), for example, the disyllabic proclitic *ali* is attached to the prosodic word that serves as first for the purposes of enclitic placement:

(37) a. *Ali*=plavu=*smo* ku□u ve□ videli.
But blue Aux-CL house already saw
'But we already saw the blue house'

b. $[_{D}$ [[ali [plavu]$_{PW}$] $_{PW}$ smo]$_{PW}$ ku□u ve□ videli

Cases of disyllabic enclitics include the future auxiliaries □*emo*, □*ete*, and the conditional auxiliaries *bismo*, *biste*. Thus the size of a clitic in no way affects its prosodic status, as is the case with free function words. Significantly, this distinction does not point to any principled ground for the bifurcation into free and bound function words. Rather, it strongly suggests that the class of clitics needs to be lexically designated.

This is further supported by a complete lack of correlation between a function word's free or bound status on the one hand, and its morphosyntactic status, on the other. In fact, free and bound function words may, and in a number of cases, do share morphosyntactic characteritics. Thus, the third person accusative pronoun, for example, has both a free and a bound alternant, as in (38):

(38) Third person accusative pronouns (masculine)
a. free form: *njega*
b. enclitic form: *ga*

This is in fact true of all pronominal and auxiliary enclitics. Some of the alternant forms are identical in shape, as is the case with the set of conditional auxiliaries *bih*, *bi*, *biste*, etc., as well as the first and second person plural forms of accusative pronouns, *nas* and

vas. Moreover, at least two proclitics participate in this type of alternation, the conjunctions *ali* and *jer*; examples with the former are given in (39) (taken from Zec and Inkelas 1990):

(39) a. Zvonili=*smo*, ali=*nam* niko nije otvorio. $[_{D}$ [[ali]$_{PW}$ nam]$_{PW}$ [niko]$_{PW}$ …
rang Aux-CL but us-CL no one not open
'We rang, but no one opened the door for us."

b. Zvonili smo, *ali*=niko=*nam* nije otvorio. $[_{D}$ [[ali [niko]$_{PW}$]$_{PW}$ nam]$_{PW}$ …
rang Aux-CL but-CL no one us-CL open
'We rang, but no one opened the door for us."

In sum, there seems to be no clear ground for distinguishing free and bound function words other than their distinct prosody. The distinction between clitics and nonclitics will thus have to be captured by prosodic specification.

Nor is there a principled basis for differentiating between proclitics and enclitics. Certain morphosyntactic classes do exhibit some general tendencies: proclitics, for example, include phrase initial elements such as prepositions or conjunctions, while pronouns and auxiliaries belong to the class of enclitics. However, sentential particles may belong either to the class of enclitics (*li, se*), or to proclitics (*ma*). The distinction between proclitics and enclitics will thus need to be stated in the function word's lexical entry.

We conclude that bound function words need to be designated in the lexicon, for the sole purpose of differentiating them from free function words. A most straightforward, and natural, solution would be to opt for prosodic prespecification since, as we saw, the difference between free and bound function words is prosodic in nature. The prosodic dependence of clitics will be formally expressed as a type of subcategorization, modeled on the morphological subcategorization of affixes (following Inkelas 1989, Zec and Inkelas 1990, Booij and Lieber 1993). The prosodic frames in (29)-(30) will be included in a function word's lexical entry, and will in fact serve to designate bound function words, and thus distinguish them from the free class. A bound function word would contain in its lexical entry a prespecified prosodic frame, which

characterizes it as either proclitic or enclitic. In all other respects, free and bound function words would be identical, as shown by the lexical entries for the clitic and non-clitic forms of the third person accusative pronoun in (40):

(40) a. *ga* Pronoun, 3rd Pers, Sg, Masc, Accusative
[[ ]$_{PW}$ __]$_{PW}$
b. *njega* Pronoun, 3rd Pers, Sg, Masc, Accusative

Crucially, there are no morphosyntactic differences between free and bound function words, that is, between clitics and non-clitics.[12] The only relevant difference is that the bound function word is a prosodic affix, while the free one is not.[13] In sum, any diacritic designation of the class of bound function words would be inferior to the proposed solution.

Since any properties of the underlying form, including prespecified representations, are protected in OT by the set of faithfulness constraints, the following constraint from the faithfulness family will require that the prespecified prosodic frame appear in the output (following Inkelas, Orgun and Zoll 1997):

(41) PROSODICAFFIX:
Any prosodic prespecification in the input must have a correspondent in the output.

The faithfulness constraint in (41) will have to outrank the prohibition against recursive structure (stated as NONRECURSIVITY in (4d) above), since its crucial effect is both to

[12] In this, I agree with Bo&koviÊ (1996, 2000), who takes the same position, proposing that clitics and non-clitics are indistinguishable in the syntax. An alternative position is to assign different morphosyntactic categories to clitics and non-clitics, as proposed, for example, in Cardinaletti and Starke (1999), and in the syntactic studies of Serbian and Croatian clitics listed in note 9. Thus, what we have shown to be a purely prosodic distinction is encoded by morphosyntactic means, leading to an undesirable, and also unnecessary, proliferation of morphosyntactic categories.

[13] Clitics have been analyzed as affix-like phrasal entities by Klavans (1985) and Anderson (1993). The present proposal crucially assumes prosodic, rather than morphological, affixation. Bo&koviÊ (1996, 2000), proposes prosodic clitic attachment which, however, is implemented by morphological merger.

supply the clitic with a host prosodic word, and to supply the entire combination with a prosodic status, again that of the prosodic word.

(42) PROSODICAFFIX >> NONRECURSIVITY

By judiciously ranking (41) with respect to other prosodic constraints, we will be able to capture the differences between the classes of function word. By ranking it higher than PWORDALIGNMENT, we ensure that a disyllabic clitic would not become a prosodic word, erroneously following the pattern of free function words:

(43) PROSODICAFFIX >> PWORDALIGNMENT

Any free functional element, and of course, any lexical one, may serve as a clitic host. Significantly, even monosyllabic free function words, those that are not associated with the prosodic word status, can host clitics; and when they do, they are pitch accented and may participate in the prominence hierarchy. The ill-formed example in (33) becomes grammatical when a clitic is positioned after the pronoun *mi*, as in (44):

(44) a. Mî=*smo* plavu kuêu veê videli.
we blue Aux-CL house already saw

b. $[_{D}$ [[mî]$_{PW}$ smo]$_{PW}$ plavu kuêu veê videli

The prosodic affix may thus assume a more active role, so to speak. It not only recognizes, but also "imposes" the clitic's subcategorization frame on the potential host. This will be captured by ranking (41) above PWORDSIZE, as in (45):

(45) PROSODICAFFIX >> PWORDSIZE

However, an enclitic cannot be placed after a proclitic. The examples in (46)-(47) provide a minimal contrast: the conjunction *i* in (46), which is a proclitic, cannot host the enclitic ê*e*, while the conjunction *pa* in (47), which is a free function word, can.

(46) a. Pozovi=*je* *i*=doêi=ê*e*. / *Pozovi je i ê*e* doêi.
Invite her-CL and-CL come will-CL
'Invite her, and she will come."

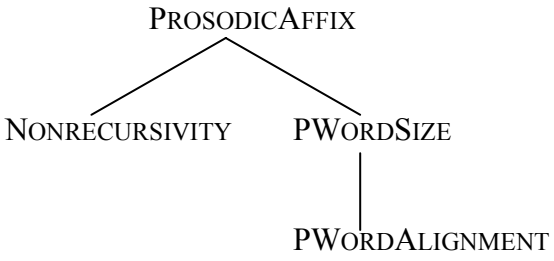
b. $[_{D}$ [i [doêi]$_{PW}$]$_{PW}$ ê*e*]$_{PW}$

(47) a. Pozovi=je pa=ê*e* doêi. / *Pozovi je pa doêi ê*f*/
Invite her-CL and will-CL come
'Invite her, and she will come."

b. $[_{D}$ [[[pa]$_{PW}$ ê*e*]$_{PW}$ [doêi]$_{PW}$]$_{PPh}$

This follows from the undominated status of the constraint PROSODICAFFIX, as shown by the ranking in (48). This constraint cannot be violated either by turning a proclitic, or an enclitic, into a clitic host.

(48) Ranking:



The contrast in (46)-(47) highlights another important point. It has been claimed in the syntactic literature that what serves as first for the purposes of enclitic placement is either the material moved in the syntax, or the material in situ, but not both (e.g., Progovac 1996). In either case, the first position is occupied by a syntactic constituent. From the prosodic perspective, what serves as first for enclitic placement needs to be a prosodic, but not necessarily a syntactic, constituent. Precisely this is the case in (46):

what occupies the first position in (46) is a conjunction, an element in situ, combined with a following verb. While this clitic host can in no way correspond to a syntactic constituent, it clearly corresponds to a prosodic constituent.

In the following sections, two additional sources of evidence for the distinction between free and bound function words will be presented: evidence from pitch accent, to be presented in section 4, and evidence from interactions of pitch accent and focus, presented in section 5. In both cases, free and bound function words overlap in their distribution, yet exhibit markedly different prosodic traits.

4. Evidence from pitch accent

The prosodic word is the domain of pitch accent, which is the principal bearer of prominence within the prosodic hierarchy. The pitch accented syllable corresponds to the head of the prosodic word, and is subject to the following constraint, which requires the head's left alignment (as proposed in Zec 1999):[14]

(49) ALIGNPA: Align (Head(PWord)-L, PWord-L)

In the simple case, the prosodic word corresponds to exactly one morphological word, and then possesses exactly one pitch accent. The more complex case is that of prosodic words with recursive structure, as in (50), enforced by the presence of clitics, and the resulting violation of NONRECURSIVITY:

(50) a. [*cl* [*host*]$_{PWi}$]$_{PWj}$
b. [[*host*]$_{PWi}$ *cl*]$_{PWj}$

In this case, two prosodic words, PW_i and PW_j, are candidates for the left alignment of pitch accent, yet only one is selected. In other words, a prosodic word may contain at most one pitch accent, as stated in (51):

(51) ONEPA: A prosodic word may contain at most one pitch accent.

In standard Serbian, it is the smallest domain that is selected, the one identical with the morphological word that serves as clitic host, as expressed by the following constraint:

(52) PA-MINIMAL: The pitch accented PWord corresponds to the innermost PWord.

This, however, is not a necessary choice. As noted in Zec (1993), there is cross-dialectal variation with regard to the selection of the pitch accent domain. While one group of dialects, including the standard (spoken in Belgrade) selects the minimal domain, another group, which includes the Herzegovian dialect, selects the maximal domain, that is, the outermost prosodic word, as the domain of pitch accent. The two cases are illustrated in (53):

(53) a. Standard: [u [kùȇ]$_{PWi}$]$_{PWj}$ 'in (the) house'
b. Herzegovian [ù [kuȇ]$_{PWi}$]$_{PWj}$ 'in (the) house'

The case of the Herzegovian dialect is captured by the following constraint, which requires the realization of pitch accent in the largest domain:

(54) PA-MAXIMAL: The pitch accented PWord corresponds to the outermost PWord.

In the spirit of OT, the difference between the two dialect groups is expressed simply as a difference in constraint ranking: in standard Serbian (52) will rank higher than (54), while in Herzegovian, the ranking will be reversed. The crucial assumption is that the prosodic representation of clitics is identical in the two groups of dialects, the only difference

[14] An additional, undominated, constraint, named in Zec (1999) Strong Foot Salience, requires that the prosodic word's head be associated with a High tone, which insures its association with pitch prominence, in addition to stress prominence. This constraint may preclude perfect left alignment of the pitch accent.

being how the two pitch accent domain constraints are ranked. The ranking relevant for standard Serbian, whose prosodic system is our central concern, is as in (55a). Additionally, as shown in (55b), ONEPA outranks both domain constraints, to insure that at most one of them is satisfied.

(55) a. PA-MINIMAL >> PA-MAXIMAL
b. ONEPA >>PA-MINIMAL >> PA-MAXIMAL

The analysis of pitch accent domains advocated here is further justified by two cases of departure from the minimal domain selection in standard Serbian. One case will be presented in this section; the other, which crucially depends on the interactions with focus, is detailed in section 5.

Consider the distribution of pitch accent in forms consisting of proclitics combined with free function words. In (56a), the free function word is monosyllabic, and in (56b), disyllabic. Of interest here is the fact that, while in (56b) pitch accent is realized as expected, that is, in the minimal domain, in (56a) it is realized on the proclitic, that is, in the maximal domain.[15]

(56) a. zà nju / *za njû ‘for her’
b. za nj̏ega / *zà njega ‘for him’

It is important to note that the departure from the minimal domain in (56a) coincides with another violation: that of PWORDSIZE. Recall that the monosyllabic function word receives the prosodic word status only by virtue of combining with a clitic: the faithfulness constraint PROSODICAFFIX outranks the constraint PWORDSIZE, which prohibits subminimal prosodic words. In all other cases it remains with no prosodic status (unless, of course, focused). The constraints posited thus far will be able to characterize

[15] This effect is restricted to the Belgrade dialect and, while robust in those speaker that do have it, seems to be disappearing in the speech of younger generations. As observed in Kojen’s (1996) study of poetic meter, accent shift from monosyllabic free function words is a peculiarity of poets that come from the Belgrade area, and is a necessary assumption in metrical scansions.

the difference in domain selection between (56a) and (56b) only if this effect is localized, which calls for constraint conjunction, a mechanism generally invoked for locally confined constraint interactions, as characterized in Smolensky (1995). In our case, the local domain is the prosodic word, and constraints subject to conjunction are PWORDSIZE and PA-MAXIMAL, as in (57):

(57) PWORDSIZE &$_{PW}$ PA-MAXIMAL

a. Ranking: PWORDSIZE &$_{PW}$ PA-MAXIMAL >> PWORDSIZE, PA-MAXIMAL
b. Constraint Satisfaction: PWORDSIZE &$_{PW}$ PA-MAXIMAL is violated if both PWORDSIZE and PA-MAXIMAL are violated.

In the following tableaux, only the monosyllabic clitic host is prevented from being the domain of pitch accent, while the disyllabic clitic host is not. In other words, the head of the prosodic word, that is, the pitch accented syllable, selects as the alignment target the left edge of the prosodic word which also meets the minimality condition. In (58a) this coincides only with the maximal domain. In (58b), both the maximal and the minimal domains satisfy this condition, hence the minimal one is selected.[16]

(58)

a. [za [nju]$_{PW}$]$_{PW}$	PWORDSIZE &$_{PW}$ PA-MAXIMAL	PA-MINIMAL	PA-MAXIMAL	PWORDSIZE
☞ ![zà [nju]$_{PW}$]$_{PW}$	*	*		*
[za [njû]$_{PW}$]$_{PW}$	* *!		*	*
b. [za [njega]$_{PW}$]$_{PW}$				
[zà [njega]$_{PW}$]$_{PW}$		*!		
☞ [za [njȅga]$_{PW}$]$_{PW}$	*		*	

No comparable effect is detected if a monosyllabic function word of the free class precedes a monosyllabic prosodic word which itself corresponds to a free function word. While it is not easy to construct a case of this sort, (59) is my best approximation:

[16] Two more candidates need to be considered: [za [nju]] and [za [njega]], with no pitch accent in any of the domains, fatally violate HEADEDNESS (in (4b)), while [zà [njû]] and [zà [njȅga]] violate ONEPA which, due to the ranking in (55b), imposes the selection of at most one domain.

(59) a. Mi *s*=njîm radimo.
we with him(Instr) work
'We work with him.'
b. [$_{D}$ [mi [s [njîm]$_{PW}$]$_{PW}$ ….]$_{PPh}$

The monosyllabic free function word *mi* has no prosodic status, and is included directly into the prosodic phrase, as shown in (59b). It is immediately followed by a monosyllabic prosodic word consisting of the proclitic *s,* which corresponds to a single consonant, and the monosyllabic host *njim*. Although the resulting prosodic word is monosyllabic, and thus violates PWORDSIZE, the conjoined constraint PWORDSIZE &$_{PW}$ PA-MAXIMAL has no power to amend this situation by invoking the maximal domain. This is because the maximal domain would correspond to the prosodic phrase, yet accent shift is restricted to the domain of the prosodic word.

There are two cases in which accent does not shift from a monosyllabic prosodic word. First, it does not shift when the monosyllabic host word is a lexical element. Due to the undominated status of MWORD$_{LEX}$, stated in (2), which guarantees that a lexical element has the prosodic word status and serves as a pitch accent domain, a lexical element is immune to prosodic interactions that functional elements are subject to.

(60) MWORD$_{LEX}$ >> PWORDSIZE &$_{PW}$ PA-MAXIMAL

Any pitch accent alignment with the left edge of the maximal domain would violate the constraint in (51), which requires at most one pitch accent per prosodic word.

Second, accent does not shift when the monosyllabic prosodic word is focused. The requirement that the focused element bear the highest prominence overrides the minimality requirement, and thus prevents domain expansion, as expressed by the ranking in (61):

(61) FOCUS >> PWORDSIZE &$_{PW}$ PA-MAXIMAL

In a reanalysis of this case, Selkirk (1995b) proposes to capture the cross-dialectal variation in pitch accent domains as a difference in the prosodic representation of clitic/host combinations. The case of standard Serbian is represented as in (62a), and that of Herzegovian, as in (62b).

(62) Selkirk (1995b):

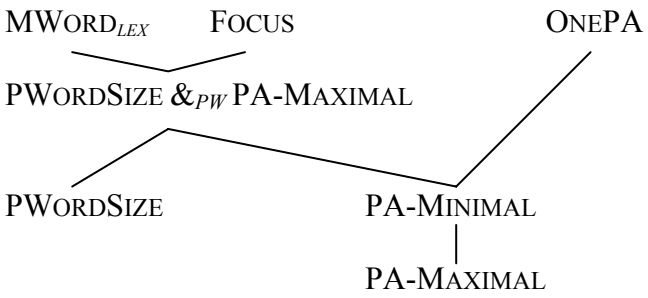
a. Standard: [u [kùȇi]$_{PW}$]$_{PPh}$ 'in (the) house'

b. Herzegovian [ù kuȇi]$_{PW}$ 'in (the) house'

The proposed representations are intended to exclude the proclitic from the pitch accent domain in the standard dialect, and to obligatorily include it in this domain in Herzegovian. In both cases the domain of pitch accent is the prosodic word. Note, however, that the representation in (62a), posited for proclitics in the standard dialect, is precisely the one reserved in our account for monosyllabic free function words. As argued in sections 2 and 3, this representation captures the properties of subminimal free function words, and is unavailable for proclitics, whose properties are fully captured only in a recursive prosodic word structure.

The relevant rankings established in this section are given in (63):

(63) Ranking:



We now turn to the second case of accent shift, which crucially depends on the interactions with focus.

5. Evidence from focus

In this section we present a case of prosody/focus interface which provides further evidence for the prosodic differences between free and bound function words. Relevant here is a class of focus introducing particles, *ni* 'neither', *i* 'also', and *bilo* 'any', reminiscent of focus introducing adverbs such as *only* and *even* in English (Rooth 1995). These particles possess identical semantic characterizations, but differ in their prosody: *ni* and *i* are bound function words, specifically, proclitics, and *bilo* is a free function word. These particles should thus be listed in the lexicon as in (64)-(65). In the semantic subpart of the lexical entry, $\{ \ldots \}_{DF}$ designates the focus domain (which corresponds to the constituent that immediately follows the particle), and X_F designates the focused element within this domain. The lexical entry of a bound function word in (64) includes a prosodic specification, while that of a free function word, in (65), does not.

(64) *ni/i* Particle
semantics: $\{\ldots X_F \ldots\}_{DF}$
prosody: $[\ \_\_\ [\qquad]_{PW}\ ]_{PW}$

(65) *bilo* Particle
semantics: $\{\ldots X_F \ldots\}_{DF}$

We begin by presenting the behavior of the particle *ni*. As shown in (66), this particle, being a proclitic, combines with its host in the predictable fashion: in each case, the pitch accent is realized on the host, which in (66a) corresponds to a lexical element, and in (66b) to a disyllabic, free function word. The syllable that bears pitch accent is additionally associated with the high degree of prominence characteristic of focus. In (67) the same proclitic combines with indefinite pronouns which belong to the class of free function words. This case departs from (66) in two unexpected ways: first, pitch accent is realized on the proclitic, which acts as bearer of focal prominence; and second, pitch accent is not realized on the indefinite pronoun which, being a disyllabic free function word, should be pitch accented.

(66) a. Nije pomogla *ni Màriji*.
not helped even Mary
'She didn't even help Mary.'
b. Ne vidi *ni njèga.*
not saw even him
'She didn't even see him.'

(67) a. Nije pomogla *nȉkome.*
not help noone
'She helped no one.'
b. Ne vidi *nȉkoga.*
not saw no one
'She saw no one.'

Forms in (68) and (69) further illustrate the combinations of the focus introducing particle *ni* with prepositional phrases. Because prepositions have the prosodic status of proclitics, this case makes it clear that *ni* cannot be analyzed as a prefix. Again, the forms in (69), in which the proclitic host is an indefinite pronoun, depart from the expected prosodic behavior, with the proclitic *ni* exhibiting pitch accent prominence, and the indefinite pronoun lacking it; and, as in (67), *ni* is also the bearer of focal prominence. In (68), pitch accent as well as focal prominence fall invariably on the host word, following the expected pattern.

(68) a. Ne govori *ni o Màriji*.
not speak neither of Mary
'He doesn't speak even about Mary.'
b. Ne dolazi *ni kod njèga.*
not visit neither him
'He doesn't visit even him.'

(69) a. Ne govori *nȉ o kome.*
not talk PART about noone
'She talks about no one.'
b. Ne dolazi *nȉ kod koga.*
not visit PART at noone
'He visits no one.'

The place of pitch accent in (67) and (69) clearly departs from the pattern we established in section 2. This departure will be attributed to a semantic peculiarity of indefinite pronouns: they cannot be the bearers of focus:

(70) An indefinite pronoun may not be the bearer of focus:
*$\{\ldots X_F \ldots\}_{DF}$, where X_F is an indefinite pronoun

Since focus is obligatory in the presence of a focus introducing particle, we add a further requirement: if no element within the domain of focus is a possible bearer of focal prominence, then, focus will land on the focus introducing particle. This is precisely what accounts for the focal prominence of *ni* in (67), and (69).

But while indefinite pronouns are incompatible with focal prominence, they are not incompatible with pitch accent. When it is not combined with a focusing particle, an indefinite pronoun can bear pitch accent, exhibiting the pattern we established in section 2 as characteristic for free function words.[17] This is illustrated in (71), with indefinite pronouns italicized. In (71a,b) the indefinite pronouns are monosyllabic, and therefore unaccented; in (71c), the disyllabic indefinite pronoun bears pitch accent; in (71d) a disyllabic indefinite is preceded by the proclitic *na*, and in (71e), a monosyllabic indefinite pronoun appears in this collocation; only in the latter case is *na* the bearer of pitch accent, following the pattern established in section 4.

(71) a. Da li se *ko* ā̀alio?
Q is someone(Nom) complain
'Did anyone complain?'
b. Ima li *ńta* za jelo?
have Q something for eating
'Is there anything(Nom) to eat?'
c. Da nisi *kòga* izostavio?
Q not someone(Acc) leave out
'Didn't you leave someone out?'

[17] As polarity sensitive items, indefinite pronouns appear in a restricted set of environments (Ladusaw 1995). Examples in (71) are all yes/no questions.

d. Da nije na=*kòga* zaboravio?
Q not on someone(Acc) forget
'Didn't he forget about someone?'
e. Da se nije *nà=čta* žalio?
Q not on something(Acc) complain?
'Did he complain about something?'

In sum, indefinite pronouns can bear pitch accent, and when they do, they follow the standard pattern. It is thus clearly the case that an indefinite pronoun cannot be focused, as further shown by (72), modeled on the example in (71c). The indefinite pronoun *koga* is not a possible bearer of focus, as shown in (72a); the verb *izostavio* is, however, as shown in (72b):

(72) a. *Da nisi izostavio KOGA$_F$? /*Da nisi KOGA$_F$ izostavio?
Q not leave out anyone$_F$ Q not anyone$_F$ leave out
b. Da nisi IZOSTAVIO$_F$ kéga? / Da nisi kéga IZOSTAVIO$_F$?
Q not leave out$_F$ anyone Q not anyone leave out$_F$
'Didn't you LEAVE someone OUT?'

But when the indefinite pronoun is replaced by a lexical element, as in (73a), or by a personal pronoun, as in (73b), these elements are perfectly good focus bearers.

(73) a. Da nisi izostavio PETRA$_F$? / Da nisi PETRA$_F$ izostavio?
Q not leave out PETER$_F$ Q not PETER$_F$ leave out
'Didn't you leave out PETER?
b. Da nisi izostavio NJEGA$_F$? / Da nisi NJEGA$_F$ izostavio?
Q not leave out HIM$_F$ Q not HIM$_F$ leave out
'Didn't you leave HIM out?

In sum, the semantic constraint in (70), and the resulting focusing of the focus introducing particle, explain why the indefinite pronouns in (67) and (69) cannot be focused. However, the semantic factors do not explain why the indefinite pronouns in (67) and (69) are barred from a lower degree of prominence, that is, from bearing pitch

accent. The lack of pitch accent on indefinite pronouns in (67) and (69) calls for a prosodic explanation, which we now turn to.

We consider here only those forms that satisfy the semantic prohibition against focusing indefinite pronouns; those, that is, that bear focus on the focus introducing particle. In tableau (74), we invoke FOCUS, the constraint in (9) that requires the highest degree of prominence on the focused constituent. Because this constraint ranks as in (63), that is, higher than either of the pitch accent domain constraints posited in section 4, the winner is the form with pitch accent on *ni*, which is the focus bearer, rather than the form with pitch accent on *kome*, which does not bear focus. As a result, the maximal domain is selected over the minimal domain, as shown below:

(74)

$[ni_G\,[o\,[\,kome]_{PW}\,]_{PW}]_{PW}$	FOCUS	PA-MINIMAL	PA-MAXIMAL
☞ !$[n\grave{i}_G\,[o\,[\,kome]_{PW}\,]_{PW}]_{PW}$		*	
$[ni_G\,[o\,[\,k\grave{o}me]_{PW}\,]_{PW}]_{PW}$	*!		*

It is due to the constraint ONEPA (permitting at most one pitch accent within a prosodic word, stated in (51)) that the form in which both *ni* and *kome* are pitch accented is ruled out, as shown in (75). The winner is the candidate that satisfies both FOCUS and ONEPA.

(75)

$[ni_G\,[o\,[\,kome]_{PW}\,]_{PW}]_{PW}$	FOCUS	ONEPA	PA-MINIMAL	PA-MAXIMAL
☞ !$[n\grave{i}_G\,[o\,[\,kome]_{PW}\,]_{PW}]_{PW}$			*	
$[n\grave{i}_G\,[o\,[\,k\grave{o}me]_{PW}\,]_{PW}]_{PW}$		*!		
$[ni_G\,[o\,[\,k\grave{o}me]_{PW}\,]_{PW}]_{PW}$	*!			*

Crucially, the focused particle *ni* is realized as a proclitic, in violation of the $MWORD_F$ constraint in (24) which requires that any focused morphological word be realized as a prosodic word. This is because the prespecified prosodic frame in the lexical entry of *ni*

in (64) above is protected by PROSODICAFFIX, stated in (41), which ranks above MWORD$_F$. As a result, the proclitic *ni* will form a recursive prosodic word structure with its host, invoking the set pitch accent constraints.

We now turn to the focus introducing particle *bilo* which, like *ni*, is focused when the only candidate for focus prominence within its domain is an indefinite pronoun. But being a free function word, *bilo* exhibits a different prosodic pattern from the proclitic *ni*. As illustrated in (76), indefinite pronouns combined with *bilo*, which bears focal prominence, fully conform to the pitch accent pattern characterized in sections 2 and 4. Thus, a monosyllabic indefinite pronoun is unaccented, as in (76a,b), while a disyllabic indefinite bears pitch accent, as in (76c); and, when a monosyllabic indefinite combines with a proclitic, pitch accent falls on the proclitic, as in (76e), while a disyllabic indefinite combined with a proclitic is the bearer of pitch accent, as in (76d).

(76) a. bílo$_F$ ko
any who
'anyone'
b. bílo$_{\boldsymbol{F}}$ čа
any what
'anything'
c. bílo$_{\boldsymbol{F}}$ kòme
any whom
'to anyone'
d. bílo$_{\boldsymbol{F}}$ o=kòme
any about whom
'about anyone'
e. bílo$_{\boldsymbol{F}}$ nȁ=čа
any on what
'on anything'

In sum, when combined with *bilo*, indefinite pronouns exhibit the same pitch accent pattern as in (71), where no interfering factors affect their prosody. This is due to the free status of *bilo* which, unlike *ni*, forms a prosodic word of its own, and realizes its pitch accent within this prosodic word, as schematized in (77):

(77) a. [bílo$_F$]$_{PW}$ ko (76a)
b. [bílo$_F$]$_{PW}$ [kòme]$_{PW}$ (76c)
c. [bílo$_F$]$_{PW}$ [o [kòme]$_{PW}$]$_{PW}$ (76d)
d. [bílo$_F$]$_{PW}$ [nà [ća]$_{PW}$]$_{PW}$ (76e)

Note that the free function word *bilo* is compatible with the prosodic word status both by virtue of being focused, thus satisfying MWORD$_F$, and by virtue of being disyllabic, satisfying PWORDSIZE. As a result, the prosodic status of the indefinite pronoun in no way depends on the prosodic status of *bilo*, and its prosodization follows the already established pattern.

In sum, the contrast between *ni* and *bilo* is fully captured by their distinct prosodic representations: *ni* is a prosodic affix, and *bilo*, a free function word.

6. Alternant free and bound forms

The two prosodic classes of functional categories, free forms and clitics, are lexically related in one important respect. As noted in section 3, there are a number of cases of alternation within a single morphosyntactic category, with one alternant being a free function word, and the other a clitic. This is illustrated by the conjunction *ali* in (78), which can act as either a proclitic or a free form; and by the accusative pronoun and a present tense auxiliary in (79)-(80) respectively, with both enclitic and free alternants ((79) is the same as (40) above).

(78) a. *ali* Conjunction
[__ [ ]$_{PW}$]$_{PW}$
b. *ali* Conjunction

(79) a. *ga* Pronoun, 3rd Pers, Sg, Masc, Accusative
[[ ]$_{PW}$ __]$_{PW}$
b. *njega* Pronoun, 3rd Pers, Sg, Masc, Accusative

(80) a. *je* Auxiliary, 3rd Pers, Sg, Present
[[ ]$_{PW}$ __]$_{PW}$
b. *jeste* Auxiliary, 3rd Pers, Sg, Present

But while the proclitic and free forms of the conjunction *ali* alternate relatively freely, as illustrated above in (39), this is not the case with the auxiliary and pronominal forms (as noted in Godjevac 2000). The free alternant of the accusative pronoun, for example, shares its discourse space with the corresponding enclitic, as illustrated in (81): the enclitic is admissible as the bearer of "given" information, as in (81a), but the free form is not, as shown in (81b).

(81) What does she think of Peter?

a. Poćuje=*ga*.
respects him
'She respects him.'

b. *Poćuje njega.
respects him

But the free form is admissible when focused, as in (82).

(82) What does she think of Peter and Maria?
Njega$_{F}$ poćuje, ali ne i nju$_{F}$.
him respects but not also her
'She respects HIM, but not HER.'

Pronouns in the accusative, genitive, and dative case possess both free and bound alternants, and exhibit the pattern in (81)-(82). Those in the instrumental case, however, have no clitic alternants, that is, correspond solely to free function words. In this case, the free form can assume a wider range of discourse roles: it can bear "given" information, as in (83), or it can be focused, as in (84).

(83) What does she think of Peter?

Impresionirana je njim.
impressed is (with) her
'She is impressed with him.'

(84) What does she think of Peter and Maria?

Njim$_{F}$ je impresionirana, ali ne i njom$_{F}$.
(with) her is impressed but not also (with) him
'She is impressed with HIM, but not with HER.'

In sum, the enclitic form blocks the unfocused free form in (81). When no clitic is available, the free form is not barred from any context, as shown by (83)-(84).

The same blocking relation holds between clitic and non-clitic auxiliaries, as illustrated by the following exchange:

(85) a. What does Maria do?

Ona=*je* poznata glumica.
she is well-known actress
'She is a well-known actress.'

b. She may be an actress, but she can't be well-known.

Ona jeste$_{F}$ poznata.
she is well-known actress
'She IS well-known.'

Only the clitic auxiliary form is possible in (85a), as shown by the ill-formed (86). In this case, again, the enclitic form blocks the corresponding free form.

(86) What does Maria do?

*Ona jeste poznata glumica.
she is well-known actress

It might be tempting to seek a prosodic explanation for the blocking effect exerted by the clitic over the corresponding free form. However, the case of the conjunction *ali*, whose free and proclitic forms may overlap in their distributions, as in (39), strongly suggests that prosody alone cannot provide an answer to the blocking effect observed here. What the blocking effect shows is that, at least in the case of pronominal and auxiliary forms, the range of prosodic possibilities is broader than the range of discourse

possibilities. The clitic and the corresponding free alternant form jointly create three prosodic options, illustrated in (81)-(82) for the pronominal, and in (85)-(86), for the auxiliary form. There is also a fourth prosodic option: focused clitics. In section 5, we saw a case of a focused proclitic. Enclitics, however, cannot be focused, and it is unclear why this would be the case. One possibility might be that the solution should be sought in the optimal distribution of pitch accent within words. Pitch accent optimally aligns with the word's left edge, as captured by the alignment constraint in (49). A focused proclitic is consistent with this optimal distribution, but a focused enclitic is not.

The discourse realm, however, can accommodate only two discourse options, which leads to the elimination of the unfocused free form, as in (81b) and (86). But the unfocused free form is perfectly functional in (83), where no clitic is available. In sum, the discourse space obviously does not expand due to the expansion of prosodic options; nor is there any overlap in discourse roles.[18] But the mechanisms of this blocking effect remain unclear. Establishing what specific aspects of the grammar are ultimately responsible for explaining the blocking effect of the enclitic over the free form will have to remain for future research.

7. Conclusion

In this paper, I have argued for a bifurcation of function words in standard Serbian into the free and bound class. I have further argued that, while the properties of the free class are to be captured by a general set of prosodic constraints, which account for both lexical elements and free functional elements, the status of bound function words, or clitics, calls for a different approach. If constraints were asked to distinguish between the two classes of function words, this would obviously call for class specific constraints. My proposal is to prespecify clitics as prosodic affixes, associating their

[18] These facts strongly argue against proposals such as that of Cardinaletti and Starke (1999), in which a three-way prosodic option, of the sort detected here, is encoded into the grammar as a three-way morphosyntactic distinction. I have argued here for encoding the distinction between free and bound function words by lexical prespecification; and against distinguishing between these two classes on morphosyntactic grounds. It is equally implausible to encode the distinction between focused and unfocused entities in morphosyntax. In sum, there is no basis for the morphosyntactic encoding of the range of prosodic options created jointly by the free/bound contrast on the one hand, and the focused/unfocused contrast, on the other.

lexical entries with prosodic subcategorization frames. The full burden of the distinction between free and bound function words is thus placed on prosody, and implemented through lexical prespecification. This accounts both for cases of distributional overlap between free and bound function words, and those in which distributions of the two classes diverge. In sum, I opt here for prosodic prespecification as the most natural, and least cumbersome, solution.

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