

Upward P-cliticization, accent shift, and extraction out of PP*
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Abstract

The paper explores how syntax influences the mapping of clitics to the prosodic structure in a dialect of Bosnian/Croatian/Serbian (BCS) that allows accent shift from nouns and adjectives to proclitics. I show that clitics preceding hosts of different morphological and syntactic complexity in the output of the syntax map to prosody differently. I establish a new correlation between the accent shift and the syntactic mobility of the host. Specifically, in a number of cases with adjectival hosts, accent can shift from the adjective to the proclitic preceding it only if the adjective is able to separate from the noun it modifies. I argue that prepositions in BCS cliticize to their host in the syntax in an upward fashion. I extend this analysis to a number of cases where non-constituents appear to be undergoing syntactic movement in BCS. The proposed analysis of cliticization also has important ramifications for the theory of phases and Abels's (2003a) generalization that complements of phasal heads cannot move. I show that it explains away several cases where phasal complements appear to be moving out of phases in contexts with clitics, removing several potential problems for the phase-based system.

1. Introduction

In this paper I discuss certain cases of syntax-prosody interaction in contexts with proclitics in Bosnian/Croatian/Serbian (BCS). Following proposals in the literature about grammar constraining the influence of syntax on phonology through mapping syntactic constituents into

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prosodic structure (Selkirk 1978/1981, 1980, 1996; Nespor and Vogel 1986; Truckenbrodt 1999; Blumenfeld 2012; Elfner 2012, 2015; Gribanova and Blumenfeld 2015, *inter alia*), I investigate how different types of morphological and syntactic complexity of the host, as well as syntactic mobility of the host, affect the mapping of clitics from the syntax to prosody, which is reflected in how closely a clitic can interact with the accent of the host in certain dialects of BCS. In particular, I focus on a BCS dialect from Bosnia and Herzegovina where a proclitic (preposition) can take over the accent of the noun following it, as in (1).¹ The clitic hosts in (1) both have an initial falling accent when they are not preceded by a clitic. When a clitic precedes a host like *kùću* ‘house’(1a), it gets a rising accent, while a clitic preceding a host like *zì:d* ‘wall’ gets a falling accent (1b).²

- (1)
- | | |
|-----------------|-------------------|
| <i>Host</i> | <i>P+Host</i> |
| a. kù ću | - zá _kuću |
| house.ACC | for_house |
| ‘a/the house’ | ‘for the house’ |
| b. zì:d | - ná _zi:d |
| wall.ACC | on_wall |
| ‘a/the wall’ | ‘on the wall’ |

However, morphological and syntactic complexity of the host can disrupt such interaction.

Regarding morphological complexity of the host influencing prosodic mapping and the

¹ Throughout the paper, I will use the following diacritic marking in the examples: [´] = rising accent; [`] = falling accent. [¨] indicates that a vowel has a lexical High tone in some examples. I will also put prominent syllables in **bold** in the relevant cases. Given that there are certain phonological conditions on the accent shift in question in addition morphosyntactic restrictions in the focus of this paper, and that individual words may have different lexical prosodic properties in different varieties (see e.g. fn 19), which needs to be controlled for before concluding if a particular speaker allows/disallows the accent shift in a particular morphosyntactic context, the prosody indicated on all examples corresponds to my own intuitions. On relevant examples, I have indicated if the judgments of speakers from other areas differ.

² BCS prepositions in (1) are proclitics (see e.g. Zec and Inkelas (1991); Ridanović and Aljović (2009) and the discussion below).

³ The clitic hosts in (1a) and (1b) are assigned accent in different ways, as a result of which the accenting of the clitic affects them in a different way. The precise accent assignment mechanisms will be discussed in the paper.

interaction of the clitic with the accent of the host, I explore contexts where affixes are added to hosts, illustrated by (1). With hosts like *zì:d* ‘wall’, there are two effects that adding a suffix may have on the accent shift. If a suffix like *-(a)nje* is added, accent shift from the host to the preposition is blocked (2a-c). In contrast, if a suffix like *-(a)r* is added, the shift is not completely blocked. However, a preposition preceding such a host gets a rising tone in (2d-e), unlike in (1), where a preposition preceding *zì:d* gets a falling tone.

- (2) a. za **zí**:da:nje (zí:da:nje)
 b. *zà_zi:da:nje
 c. *z**á**_zi:da:nje
 for_building.ACC
 ‘for building’
 d. z**á**_zida:ra (zida:ra)
 e. *zà_zida:ra
 for_builder.ACC
 ‘for the builder’

cf. z**à**_zi:d
 for_wall

Regarding syntactic properties of the host, I investigate the effect that syntactic complexity and mobility of the host have on the phenomenon in (1). Specifically, a preposition cannot take over the accent from a host that is syntactically complex, i.e. if the phrase the preposition takes as its complement has more than one branch. This is illustrated in (3), where a preposition preceding a noun like *kùću* ‘house’ that is coordinated with another noun cannot surface accented (cf. (1), where *kùću* is not embedded in a syntactically complex phrase and the shift is possible).

- (3) a. *z**á**_kuću i bá:štu (kùću)
 for_house.ACC and garden.ACC
 b. za kùću i bá:štu
 for house.ACC and garden.ACC
 ‘for the house and garden’

cf. z**á**_kuću
 for_house

I argue that the crucial difference between the cases in (1)-(3) concerns how clitics are mapped from their position in the output of the syntax to the prosodic structure.

Furthermore, with respect to contexts with adjectival hosts, I show that syntactic mobility of the host coupled with a particular type of cliticization determines whether a clitic precedes a syntactically simple or complex host in the output of the syntax, prior to the prosodic mapping. Crucially, in this respect there is a puzzling correlation between accent shift from a host to a proclitic and the syntactic mobility of the host, which has not been noticed before. BCS allows accent shift from an adjective to a proclitic in (4a), but not in (4b).

- (4) a. **ú**_sta:ro:j kùcí (stà:ro:j)
 in_old.LOC house.LOC
 ‘in the old house’
- b. ***ú**_sta:ro:j vèliko:j kùcí
 in_old.LOC big.LOC house.LOC
 Intended: ‘in the old big house’

This type of accent shift is correlated with contexts in which the adjective can be separated from the noun it modifies. Specifically, in contexts parallel to (4), an adjective can separate from the noun in (5a), but not in (5b).

- (5) a. Stà:ru: je vóljela [_{NP} t_i kùću].
 old.ACC is loved house.ACC
 ‘She loved the old house.’
- b. *Stà:ru: je vóljela [_{NP} t_i vèliku: kùću].
 old.ACC is loved big.ACC house.ACC
 ‘Intended: She loved the big old house.’

I will explore the ramifications of the correlation in question for the prosodic parsing of clitics and the nature and timing of cliticization. This will lead me to investigate the phenomenon in (6), illustrating a discontinuous PP, where the preposition and the adjective modifying the noun in the P-complement are separated from the rest of the PP (6).

- (6) [**Ú**_sta:ro:j] je ží:vjela t_i kùcí.
 in_old.LOC is lived house.LOC
 ‘She lived in the old house.’

One of the questions that such data raise is whether clitics attach to the host in the syntax as argued by Borsley and Jaworska (1988), Corver (1992), and Bošković (2005; 2013a), or whether the prosodic mapping of clitics proposed by Selkirk (1996) is enough to fully capture the cliticization here. I will argue for an approach that combines upward cliticization of the preposition to its host in the syntax and prosodic mapping based on the new correlation between accent shift and host mobility noted above. Prosodic behavior of clitics in different contexts can be a useful indicator of what kind of host the clitic precedes in the output of the syntax. Specifically, we will see that in the context of attributive adjectives, a proclitic (preposition) precedes a syntactically complex (branching) host (NP) in its base generated position, but after it cliticizes to the adjective in the syntax, it reaches the phonological component preceding a simple, non-branching host parallel to cases with simple nouns in (1). I will discuss in detail why cliticization of a preposition to a non-branching adjectival host is blocked if the adjective is syntactically immobile in constructions where no proclitic is present (see Section 3.2.).

I will also show that the analysis proposed in the paper for examples like (4) and (6) can be extended to a number of other cases. The analysis will be also shown to have important consequences for the theory of phases (specifically, for Bošković 2013b) and the claim that phasal complements are immobile (Abels 2003a). In particular, with respect to contexts where a phasal complement is headed by a clitic, I show that the analysis proposed here accounts for several cases where it appears that a complement of a phasal head moves, without involving such movement. This supports Abels's claim that such extraction is not possible.

The paper is organized as follows. In Section 2, I briefly introduce basic accentual rules used in BCS and the contexts in which a clitic can interact with them. I investigate environments in which a proclitic can take over the accent from its host; based on empirical observations

regarding this domain, I suggest a structure sensitive mapping mechanism of clitics from syntax to prosody in Section 3. In Section 3.1, I discuss how different levels of morphological and syntactic complexity of the host influence clitic mapping to the prosodic structure and accent shift. In Section 3.2, I explore how syntactic mobility of the host affects the mapping and accent shift in question and present an analysis of P-cliticization that combines syntactic cliticization and prosodic mapping. In Section 4, I discuss some theoretical consequences of the analysis, which involve resolving a problem for Bošković’s (2013b) approach to phases, in which every lexical category projects a phase in its domain, and Abels’s (2003a) generalization about the immobility of phasal complements.

2. BCS accent assignment

Since one of the goals of the paper is to explore syntactic influence on prosodic environments in which BCS proclitics either interact or fail to interact with accent assignment rules, in this section I give a basic overview of BCS accent and the rules the language employs in this respect.

BCS is usually classified as a pitch-accent language because prominent syllables carry a tone.

The tone can be either falling (7a-b) or rising (7c-d) on both long and short vowels.

(7)	<i>falling</i>	<i>rising</i>	
a.	kò:se: ‘steep.NOM.PL.FEM.LF/ ‘steep.GEN.SG.FEM.LF’	c. kó:se: ‘steep.GEN.SG.FEM.SF’	<i>long</i>
b.	kòse: ‘mow.3PL.PRES’	d. kóse: ‘hair.GEN.SG’	<i>short</i>

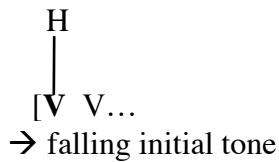
A falling tone usually occurs on initial syllables⁴, while a rising tone can occur on initial and medial but not on final syllables. Various analyses have been offered to capture this distribution

⁴ The falling pitch is usually word-initial, which is reported in most descriptions of BCS, but Riđanović (2012) also gives four classes of polysyllabic nouns in which the falling accent occurs in a medial syllable (e.g. (i) *elegantan* – ‘elegant’; (ii) *komandant* – ‘commander’; (iii) *generà:tor* – ‘generator’; (iv)

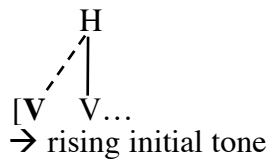
of the two tones (see e.g. Browne and McCawley 1965; Inkelas and Zec 1988; Halle 1997; Werle 2009). The final result of the analyses can be summarized as follows:

- (i) A *falling tone* is a result of a word-initial High tone⁵ (8a).
- (ii) A *rising tone* is a result of a non-word-initial High tone that undergoes spreading to the preceding syllable making it prominent (8b) (see e.g. Inkelas and Zec 1988).

(8) a. *H on the 1st syllable*



b. *H on the 2nd syllable*



Which syllable in a word bears a phonetically realized High tone in the simplest cases⁶ depends on the lexical marking of the morphemes contained in the word. BCS roots and affixes can be lexically marked or unmarked for a High tone. When a string of morphemes in a prosodic word contains only one lexical High tone, that tone is realized, as in (9a), where a toneless root *žen-* is followed by a suffix with a lexical High tone, which undergoes spreading to the root (8b). In situations where a prosodic word contains more than one lexical High tone, the leftmost one is realized (9b). In contrast, if a prosodic word has no lexical High tone, then a default High tone is inserted into the initial syllable (9c) (see e.g. Inkelas and Zec 1988).

Makedò:nija – ‘Macedonia’). Inkelas and Zec (1988) also note a couple of lexical exceptions to the rule of High tone spreading which operates in the language.

⁵ Some analyses posit an “accent mark” in the underlying representation (Browne and McCawley 1965, 1973) or on the metrical grid (Halle 1997) that is subsequently linked to a High tone if accentual rules or algorithm pick it out as prominent. Such level of detail need not concern us for the discussion of the phenomena in this paper. Knowing the locus of the prominent syllable suffices for our purposes, but in some cases it will be necessary to pay attention to whether the prominent syllable has a rising or falling accent.

⁶ By the “simplest cases” I refer to cases where High tone realization does not depend on morphosyntactic complexity of the phonological word, which, as we will see below, can play an important role.

- (9) a. žen+a_H → žéna
 ‘woman.NOM’
- b. la:_Hrv+a_H → là:rva
 ‘larva.NOM’
- c. ne+ra:d → nèra:d
 ‘idleness.NOM’

Crucially, there are two ways in which a clitic can interact with the accent of its host. The clitic either has to be in the domain of High tone spreading or in the domain of the default rule of High tone insertion. As I will argue below, there are cases in which these two domains overlap, and also cases where they do not. The following section starts with an illustration of these two types of interaction, before moving on to discussing how syntax influences it in more complex cases.

3. Structure sensitive clitic mapping to prosody

In this section I present environments in which BCS allows accent shift from hosts to proclitics with nominal and adjectival hosts. I will show that two syntactic properties of the host, in particular, its complexity and its mobility, influence the accent shift in question. Based on such influence of the syntax on accent shift, I will argue that the output of the syntax determines how clitics are mapped in the prosody, building on the basic proposals about the Prosodic Hierarchy (Selkirk 1978), prosodic mapping of clitics put forward by Selkirk (1996), and prosodic mapping of syntactic phrases proposed by Elfner (2012, 2015).

3.1. Accent shift to clitics with syntactically simple and complex hosts

Prior to discussing what effect syntactic mobility of the host has on accent shift to proclitics, it is necessary to understand in which syntactic configurations a proclitic can interact with the accent of its host and in which configurations such interaction is not possible. Specifically, I consider

three levels of host complexity, examining how clitics are mapped from the syntax to prosody when they precede morphologically and syntactically simple hosts, morphologically complex hosts, and syntactically complex hosts, as well as the effect that the complexity of the host has on accent.

With simple non-derived nominal hosts, in some BCS dialects⁷ a proclitic can take over the accent from the noun following it, as shown in (10)-(11), where a preposition surfaces accented before a noun (Basic examples involving this shift have been reported by Zec and Inkelas 1991: 516-517; Riđanović and Aljović 2009: 390. In (10)-(11), I include examples with a variety of prepositions). The shifting of prominence to the preposition in these dialects can take place in two ways, depending on the lexical specification of the host for a High tone. If the host has an inherent initial High tone, a preposition preceding it gets a rising accent as a result of the rule of High tone spreading operating in BCS, as illustrated with the examples in (10). This rule spreads a High tone to the syllable preceding it, giving the latter syllable prominence and a rising accent (see e.g. Inkelas and Zec 1988; Halle 1997). This kind of accent shift happens in most cases where the shift is possible because most BCS roots have a lexical High tone.

- (10) *P+Host with initial H → Rising tone on PCL*⁸
- | | | |
|-------------------|--------|-----|
| a. ú _sobi | (sòbi) | P+N |
| in_room.LOC | | |
| ‘in the room’ | | |

⁷ The kind of accent shift examined in this paper has been reported in the literature on BCS accent to be found in south Bosnia and Herzegovina (=Herzegovina) and Montenegro (see, for example, Magner and Matejka 1971; Lehiste and Ivić 1986; Riđanović and Aljović 2009 for discussion of the Herzegovinian dialect; and Werle 2009 for the Piva-Drobnjak dialect). However, judgments reported in this paper are also in line with my own dialect (central Bosnia), and three other speakers of shifting dialects who have judged the data in this paper come from central, northeast, and southern Bosnia and Herzegovina.

⁸ Note that in shifting dialects, the shift is also possible with some disyllabic prepositions.

(i) ispréd_kuće:
in.front.of_house.GEN
‘in front of the house’

With this particular preposition, the shift leads to devoicing the final [d] in front of the root initial [k].

- b. **íz_kuće:** (kùće:)
 from_house.GEN
 ‘from/out of the house’
- c. **préd_zgrado:m** (zgràdo:m)
 in.front.of_building.INST
 ‘in front of the building’
- d. **ná_mjese:cu** (mjèse:cu)
 on_moon.LOC
 ‘on the moon’
- e. **kód_štale:** (štàle:)
 next.to_barn.GEN
 ‘next to the barn’
- f. **ná_pod** (pòd)
 on_floor.ACC
 ‘on the floor’

In cases where the host does not have a lexical High tone, the default rule of initial High tone insertion operates. Without a preposition, the High tone is inserted to the initial syllable of the host and realized as falling. When a preposition precedes such a host, it acts as the initial syllable in the domain and gets the default High tone instead of the host, which is realized as a falling accent on the preposition (11). These cases are less frequently found than those in (10), as noted by Riđanović and Aljović (2009: 383).

(11) *P+Toneless host* → *Falling tone on PCL*

- a. **zà_ra:d** (rà:d) P+N
 on_work.ACC
 ‘for the article/for work’
- b. **ù_gra:d** (grà:d)
 in_city.ACC
 ‘to town’
- c. **òd_si:na** (sì:na)
 at_son.GEN
 ‘from the son’
- d. **nìz_pu:t** (pù:t)
 down_road.ACC
 ‘down the road’

- e. prèd_zi:d (zì:d)
 in.front.of_wall.ACC
 ‘in front of the wall’

The domain of both of these rules (spreading and insertion) in BCS is the prosodic word (Inkelas and Zec 1988);⁹ according to Selkirk (1996), these rules apply to the syllable string containing proclitics in cases like (10) and (11) because proclitics are inside the prosodic word.

From what we have seen above, being within the prosodic word of the host is one condition a preposition needs to meet to be able to interact with its accent. Apart from this, the interaction is possible only if the preposition finds itself either in the environment where the rule of High tone spreading applies, i.e. if it immediately precedes a syllable with a High tone in the same prosodic word; or in the environment where the rule of High tone insertion applies, i.e. if the preposition is the first syllable in a prosodic word without a High tone. This means that proclitics can interact with the accent of hosts that have an initial inherent or default High tone, realized as a falling accent in the absence of clitics (e.g. sòbi – room.LOC; mò:st – bridge.ACC), and that the presence of a proclitic in front of a host that has an initial or non-initial rising accent has no effect on its prosody.

In contrast to (10) and (11), Riđanović and Aljović (2009) observe that a proclitic preceding a syntactically complex constituent cannot take over the accent of the word immediately following it even in a dialect that otherwise allows the shift. This is illustrated in (12)-(13) (inspired by data from Riđanović and Aljović 2009: 393-394), which shows that a proclitic cannot take over the accent from a noun immediately following it when the noun itself is followed by a PP or an NP (12), or when it is coordinated with another noun (13).

⁹ As discussed below, the domains of application of these two rules sometimes differ and sometimes overlap, both domains being within the prosodic word. Thus, before I discuss cases where the domains of these two rules do not overlap, I use the general term “prosodic word” to refer to the domain of application of both High tone insertion and High tone spreading.

- (12) a. *ʔú_sobi na prí:ze:mlju (sòbi) P+[NP+PP/NP]
in_room.LOC on ground.floor.LOC
- b. u sòbi na prí:ze:mlju
in room.LOC on ground.floor.LOC
‘in the room on the ground floor’
- c. *nà_mo:st pored pó:zori:šta (mò:st)
on_bridge.ACC next.to theater.GEN
- d. na mò:st pored pó:zori:šta
on bridge.ACC next.to theater.GEN
‘on the bridge next to the theater’
- e. *pód_prag njégove: kùće: (pràg)
under_threshold.ACC his.GEN house.GEN
- f. pod pràg njégove: kùće:
under threshold.ACC his.GEN house.GEN
‘under the threshold of his house’
-
- (13) a. *ú_sobi i hòdni:ku (sòbi) P+[N and N]
in_room.LOC and hallway.LOC
- b. u sòbi i hòdni:ku
in room.LOC and hallway.LOC
‘in the room and the hallway’
- c. *òd_si:na i kéc:rke: (sì:na)
from_son.GEN and daughter.GEN
- d. od sì:na i kéc:rke:
from_son.GEN and daughter.GEN
‘from the son and the daughter’
- e. *zà_gra:d i sélo (grà:d)
for_town.ACC and village.ACC
- f. za grà:d i sélo
for_town.ACC and village.ACC
‘for the town and the village’

In (13), if the shift takes place from the first noun, the preposition needs to be repeated in the second conjunct as well (see Riđanović and Aljović 2009: 393, fn. 7.).

- (14) ú_sobi i ú_hodni:ku (sòbi; hòdni:ku)
in_room.LOC and in_hallway.LOC
‘in the room and in the hallway’

Similarly, when a noun host is followed by a clausal complement (15a-b) or a relative clause (15c-f), accent cannot shift to the preposition (Riđanović and Aljović (2009: 394) also report an example with a relative clause).

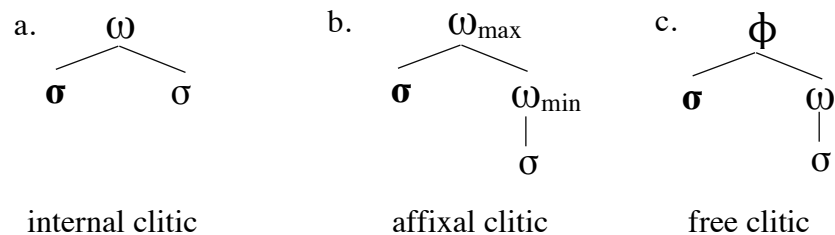
- (15) a. *Ní:je čùla zá_trač da je izgúbio. (tràč)
 neg.is heard for_gossip that is lost
- b. Ní:je čùla za tràč da je izgúbio.
 neg.is heard for gossip that is lost
 ‘She didn’t hear about the gossip that he lost.’
- c. *Úšli su ú_kuču kòja: íma: plá:vu fasá:du. (kùcu)
 entered are in house which has blue façade
- d. Úšli su u kùcu kòja: íma: plá:vu fasá:du.
 entered are in house which has blue façade
 ‘They entered the house which has a blue façade.’
- e. *Kú:pio je póklon zá_ma:jku, kòja: ga je odgójila. (mà:jku)
 bought is present for mother which him is raised
- f. Kú:pio je póklon za mà:jku, kòja: ga je odgójila.
 bought is present for mother which him is raised
 ‘He bought a present for (his) mother, who raised him.’

The question that arises here is why syntactic complexity of the phrase following a proclitic should matter for whether it can interact with the accent of the word immediately following it.

I argue that the contrast between (10)-(11) and (12)-(15) follows from the way clitics are mapped from the syntax to the prosody. The mapping of clitics crucially depends on how complex syntactic constituents surrounding them are and how they map to prosody. The analysis I develop for BCS proclitics is based on proposals in Wagner (2005), Ito and Mester (2007), Selkirk (2011), Clemens (2014), and Elfner (2015), where recursive prosodic structures are permitted, which reflects the nested morpho-syntactic structure more closely than the prosodic structure that follows the Strict Layering Hypothesis (e.g. Beckman and Pierrehumbert 1986; Nespor and Vogel 1986; Selkirk 1986, *i.a.*). For the purposes of this paper, it will be necessary to

discuss what prosodic constituents correspond to syntactic heads (X°) and syntactic phrases (XP); I will put aside how clauses are mapped to the prosodic structure since all the syntactic and prosodic processes under consideration take place within a phrase. Regarding the prosodic status of X° s, following Anderson (2005, 2011), I assume that the property of being a clitic or non-clitic is a characteristic of the phonological form realizing each syntactic head. Namely, while non-clitic phonological forms are lexically assigned the status of a prosodic word, clitic elements are *prosodically deficient* in this sense and need to become a part of a prosodic word or a phonological phrase through the mapping of the syntactic to the prosodic structure.¹⁰ In this respect, I adopt Selkirk's (1996) proposal that clitics map to prosody in three different ways, depending on how closely they are attached to the prosodic word of their host (16). Closest to the host are internal clitics, which incorporate into the prosodic word of the host (16a); affixal clitics are adjoined to the prosodic word of the host, creating a recursive prosodic word with two levels, which I will label here as min(imal) and max(imal) (16b); free clitics are sisters to the prosodic word of the host and create a phonological phrase with it (16c).¹¹

(16)



As mentioned earlier, BCS dialects differ in whether or not they allow accent shift to proclitics even with morphologically and syntactically simple hosts. For example, Selkirk considers cases

¹⁰ Lexical and functional syntactic elements have been argued to differ in terms of how they map to prosody (Selkirk 1996, 2011; Truckenbrodt 1999; *i.a.*). While all lexical syntactic words (N, V, A) map as prosodic words by default, most functional elements (Det, P, Prn, etc.) are not prosodic words and they find different ways to attach to the prosodic word or a phrase of an immediately adjacent element.

¹¹ I use standard symbols in prosodic literature to mark phonological phrase (ϕ), prosodic word (ω), and syllable (σ).

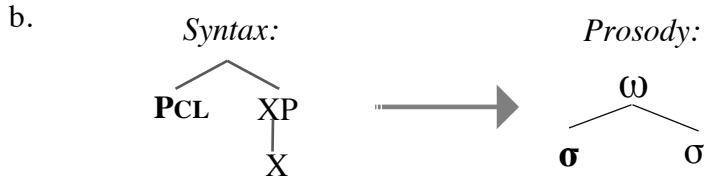
where the host is a simple non-derived noun and argues that clitics map as either internal or affixal clitics in BCS dialects that allow the shift in (10)-(11). Such clitics can interact with the accent of the host because they are in the same prosodic word with the host. In dialects that disallow the accent shift in (10)-(11), on the other hand, Selkirk argues that clitics map as free clitics. Given that free clitics are outside of the prosodic word of the host, they cannot interact with its accent. In Selkirk's account the different clitic mapping in different dialects is a result of constraint ranking within the optimality theory (McCarthy and Prince 1993). Crucially, the mapping in (16a) is a result of Non-Recursivity (banning recursive prosodic words) and Exhaustivity (banning phonological phrases to immediately dominate syllables)¹² outranking syntax-prosody alignment constraints. The mapping in (16c) is a result of Exhaustivity being outranked by Non-Recursivity and alignment constraints. However, under this account it is not possible to have all three prosodic structures in (16) in the same dialect because the difference between dialects is captured by different constraint ranking. Moreover, it is not possible to map the same clitic linearly preceding the same root in all three ways. Therefore, this account is not enough to capture the whole paradigm found in the shifting dialect discussed above.¹³ I have shown that even in a dialect that allows accent shift, this shift is not possible in all cases. Based on the contrast between (10)-(11) and (12)-(15), I argue that the mapping of proclitics to the prosodic structure depends on the structural complexity of the host that the clitic precedes in the

¹² See Selkirk (1996) for formal definitions of these constraints. For the purposes of this paper, it suffices to know that the constraint Non-Recursivity bans prosodic structures where a prosodic category contains a prosodic constituent of the same level in the Prosodic Hierarchy (Selkirk 1978) (e.g. a prosodic word contains a prosodic word), and that Exhaustivity bans prosodic structures where a prosodic category immediately dominates a constituent more than one level lower in the Prosodic Hierarchy (e.g. a phonological phrase dominates a syllable).

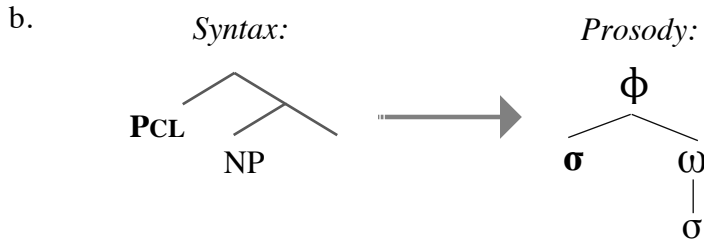
¹³ Zec (2005) accounts for the difference between shifting and non-shifting dialects with simple hosts by proposing that pitch-accent rules in different dialects apply at different levels of the prosodic word, maximal vs. minimal prosodic word. However, this account does not capture all the empirical facts presented in this paper regarding the influence of morphological and syntactic branching on accent shift in the shifting dialect.

output of the syntax. Crucially, the difference between shifting and non-shifting *contexts* in dialects that allow accent shift to proclitics is then the following:

- (17) a. A clitic (PCL) attached to a morpho-syntactically non-branching host incorporates into the prosodic word of the host and can interact with its accent.



- (18) a. A clitic attached to a syntactically branching¹⁴ host is a sister to the prosodic word of the host (free clitic) and cannot interact with its accent.



To see why proclitics do not map the same way in the context in (17) and in (18), we also need to consider how syntactic phrases (XPs) are mapped to the prosodic structure. In this respect, Elfner (2015) formulates the basic phrase mapping principle in (19a), based on the constraint Match-Phrase proposed by Selkirk (2011) in (19b).

- (19) a. $XP \rightarrow \phi$

For every syntactic phrase (XP) in the syntactic representation that exhaustively dominates a set of one or more terminal nodes α , there must be a prosodic domain (ϕ) in the phonological representation that exhaustively dominates all and only the phonological exponents of the terminal nodes in α . (Elfner 2015: 1177)

- b. Match (α, π)¹⁵

The left and the right edges of a constituent of type α in the input of syntactic representation must correspond to the left and right edges of a constituent of type π in the output phonological representation. (Selkirk 2011: 20)

¹⁴ What is meant by a syntactically branching host in this paper is a host that is an unambiguous phrase (XP) in the syntax, i.e. an X^o followed by an XP, an XP followed by another XP, or a coordinated structure (&P).

¹⁵ This constraint stands for a set of syntax-prosody faithfulness constraints, where α is a variable over types of syntactic constituents (Clause, XP, X) and π is a variable over corresponding prosodic constituents (ι, ϕ, ω).

Crucially, the principle in (19) yields the default mapping from syntactic to prosodic phrases. However, this default prosodic structure may be readjusted in the phonological component in order to satisfy constraints on well-formedness of the prosodic structure. An example of such a constraint is that some prosodic constituents have a general tendency to be binary (see e.g. McCarthy and Prince 1993; Inkelas and Zec 1990; Ito and Mester 1992; Zec 2005; Selkirk 2011; Elfner 2015, *i.a.*). As it will be shown, phonological phrases in BCS need to satisfy the constraint in (20).

(20) *Binary Minimum* (ϕ, ω): a ϕ constituent in the prosodic representation must dominate a minimum of two ω . (Elfner 2015: 1180)

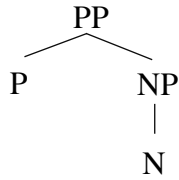
Furthermore, lexical and functional categories have often been argued to behave differently in how they interact with the rules of prosodic mapping. In that respect, Truckenbrodt (1999) essentially argues that functional elements and their projections are not visible to prosodic mapping, suggesting the condition in (21).

(21) *Lexical Category Condition* (LCC)¹⁶
 Constraints relating syntactic and prosodic categories apply to lexical syntactic elements and their projections, but not to functional elements and their projections, or to empty categories and their projections. (Truckenbrodt 1999: 226)

Returning to the contrast between shifting and non-shifting contexts given in (10)-(11) and (12)-(13) respectively, the interaction of the mapping principle (or the Match constraint) in (19) together with the constraint in (20) predicts different clitic placement for the two contexts. First, let us derive the cases when a preposition takes a single noun as a complement (10)-(11), with the syntactic representation in (22).

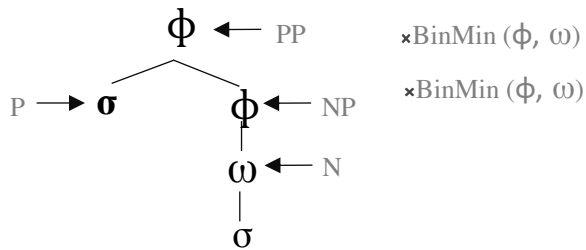
¹⁶ See e.g. Nespor and Vogel 1986; Truckenbrodt 1999; Elfner 2015.

(22) Syntactic Representation



Without considering the binary minimum constraint or the LCC, the mapping principles alone would yield the following prosodic structure for (22):

(23) Incorrect Prosodic Representation for (22)



However, the structure in (23) does not satisfy the general tendency regarding the size of phonological phrases in BCS (20) at the two levels (neither the NP node, nor the PP node dominate constituents that are mapped to two prosodic words). Therefore, when each syntactic node is mapped to the prosodic structure, constraints on the size of prosodic constituents are taken into consideration. Since the NP node cannot map as a phonological phrase due to (20), the whole non-branching NP is mapped as a prosodic word. The PP also cannot map as a phonological phrase due to (20) given that it does not dominate two prosodic words, and in addition to that, if prepositions are functional categories, then they should be invisible to prosodic mapping constraints by the LCC (21). Under the Optimality Theory framework, this can be represented as shown in the tableau in (24), which shows how these constraints interact to get the clitic to incorporate into the prosodic word of the host in cases where the host is simple. In the parsing in (24a), the nonbranching N is parsed as a prosodic word, the NP and P (parsed as

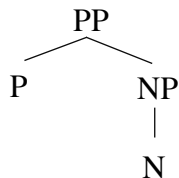
ϕ) violate the binarity requirement because the phonological phrase dominates a prosodic word and a syllable (not two ω). This also violates Match because the phonological phrase corresponding to the NP dominates a syllable that NP does not dominate in the syntax. In (24b), the proclitic and the noun are parsed together as one prosodic word. Such parsing does not violate binarity, and given the ranking of BinMin over Match, this candidate is preferred even though it violates the Match constraint.

(24)

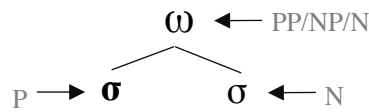
[PP za [NP rad]]	BinMin(ϕ, ω)	Match-α
a. (za (rad)ω)ϕ	*	*
b. → (za rad)ω		**

As a result, the proclitic P is dominated by the prosodic category of its syntactic sister, i.e. it is incorporated into the prosodic word of the NP as in (25b).

(25) a. Syntactic Representation



b. Prosodic Representation

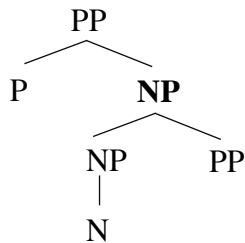


Crucially, the mapping in (25b) places the clitic and the host in the same accentual domain (prosodic word), and the clitic can interact with the accent of the host. If the host does not have a lexical High tone, the clitic gets a default High tone as the initial syllable in the prosodic word, yielding a falling tone on the proclitic (11). If the host has a High tone, the High tone spreads to the proclitic, giving it a rising tone (10).

Turning to syntactically branching NPs in (12)-(13), in all these cases the complement of the preposition in the syntactic representation is a syntactically branching phrase: an NP

consisting of the noun head and a postmodifier or a complement, or an &P joining two nouns. I will illustrate how such PPs are mapped using an NP with a PP postmodifier with the syntactic representation in (26).

(26) Syntactic Representation



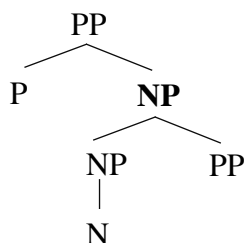
Consider the two potential ways to parse a phrase of this complexity in prosody given in (27). In (27a), the N is mapped as a prosodic word, the PP modifier (or more precisely, the NP within the PP) as a phonological phrase, the NP is mapped as a phonological phrase, and the proclitic is attached as a free clitic (sister to the prosodic word of N, dominated by the phonological phrase corresponding to NP). Assuming that the PP modifier within the NP contains at least one prosodic word, this parsing then also does not violate the binarity requirement on phonological phrases because the phrase corresponding to the NP now also dominates N and a whole phonological phrase (or at least another ω). However, this parsing does violate the Match constraint since the phonological phrase dominating terminals exhaustively dominated by NP also dominates P, which is not dominated by NP. In (27b), the proclitic is dominated by the same prosodic word as the noun following it on a par with the parsing in (24b) where it was possible for the proclitic to incorporate due to BinMin. However, in this case, parsing the NP as a phonological phrase does not violate binarity, and given that the parse in (27b) violates the Match constraint both in the parsing of NP and the parsing of N, the candidate in (27a) with only one violation is preferred.

(27)

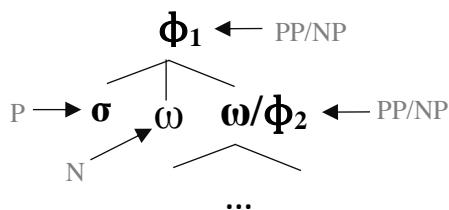
[PP za [NP rad [PP ...]]]	BinMin(ϕ , ω)	Match- α
a. \rightarrow (za (rad) ω (...) ϕ) ϕ		*
b. ((za rad) ω (...) ϕ) ϕ		**

Crucially, the preposition is dominated by the prosodic category its syntactic sister is mapped to, which is a phonological phrase that dominates the NP in this case.

(28) a. Syntactic Representation



b. Prosodic Representation



In this prosodic configuration, the proclitic is outside of the accentual domain of the noun and it cannot interact with its accent, which accounts for why the preposition remains unaccented when it is followed by a branching NP (12)-(15). Crucially, the mapping of BCS proclitics to the prosodic structure depends on the structural complexity of the host that the clitic precedes at the output of the syntax.

It is relevant to note here that in some environments where a preposition precedes an NP with an adjective, accent can shift from the adjective to the preposition (see (4a)) and in some it cannot (see (4b))¹⁷. The cases where such shift is possible are instances where syntactic branching of the host at first glance should block the accent shift in question, since an NP containing an AP is a branching NP. However, in Section 3.2 I show that cases in which such shift is possible are

¹⁷ A number of additional examples of both types will be given in Section 3.2.

instances of the mapping in (25) and cases in which a preposition cannot take over the accent from an attributive adjective are instances of the mapping in (28).

In addition to the two environments discussed in (10)-(13) above, which were noted in the previous literature, there is another environment that represents a middle case. Crucially, morphological complexity of the host also affects the accent shift in question, but unlike phrasal branching of the host (12)/(13), it does not completely block the shift in all cases.

The first effect this kind of complexity of the host has on the shift is visible with derived nominals that do not have an inherent High tone with derivational suffixes that also lack a High tone. In particular, we have seen that a proclitic preceding a simple non-derived host without a lexical High tone in (11) gets a falling accent as a result of initial High tone insertion to the syllable of P. Compare this to the nominal hosts that are derived from nouns in (11). In such cases, the preposition can only get a *rising* accent (29), which indicates that the rule of High tone spreading takes place.

- | | | |
|---|-------------|--|
| (29) a. z ^á _ra:dni:ka
for_worker.ACC
'for the worker' | (rà:dni:ka) | cf. z ^à _ra:d
for_work.ACC
'for work' |
| b. *z ^à _ra:dni:ka
for_worker.ACC | | |
| c. z ^á _moćni:ka
for_powerful.person.ACC
'for the powerful person' | (mòćni:ka) | cf. z ^à _mo:ć
for_power.ACC
'for the power' |
| d. *z ^à _moćni:ka
for_powerful.person.ACC | | |
| e. z ^á _zida:ra
for_builder.ACC
'for the builder' | (zìda:ra) | cf. z ^à _zi:d
for_wall.ACC
'for the wall' |

f. *zà_zida:ra
for_builder.ACC

g. zá_zuba:ra
for_dentist.ACC
'for the dentist'

h. *zà_zuba:ra
for_dentist.ACC

(zùba:ra)

cf. zà_zu:b
for_tooth.ACC
'for the tooth'

Given that these roots do not have an inherent High tone, the High tone that spreads to the proclitic can only be a result of initial High tone insertion applied to the host without the clitic. If the clitic were in the domain of this rule, as in (11), the High tone would be inserted to the proclitic and realized as a falling accent on the proclitic. The examples in (29b,d,f,h) show that this is not possible. The rising tone on the proclitic in these cases indicates that the clitic and the host are not in the same domain for the purposes of High tone insertion, but they *are* in the same domain for the purposes of High tone spreading. In other words, proclitics in such cases behave as if they are both inside and outside of the prosodic word of the host. This is precisely what Selkirk (1996) suggests for affixal clitics (16b), which are adjoined to the prosodic word of the host. A clitic adjoined to the prosodic word of the host creates a larger prosodic word. Therefore, there is a level of the prosodic word that includes the host, but excludes the clitic. I will refer to these two prosodic word levels as the minimal (inner) and maximal (outer) prosodic word.

- (30) a. The minimal (inner) prosodic word = root + derivational suffix (host)
b. The maximal (outer) prosodic word = clitic + root + derivational suffix (P+host)

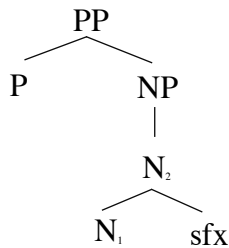
Thus, I take the contrast in (29) to suggest the following mapping to prosody in these cases:

(31) a. A clitic preceding a morphologically branching¹⁸ host adjoins to the prosodic word of the host.



The PPs in (29) have syntactic representation as in (32a), where the NP is not branching, but it has a morphologically complex noun with two X^0 levels that need to be mapped to a prosodic word.

(32) a. Syntactic Representation



Potential alternatives of mapping the syntactic structure in (32) to prosody are given in (33). In (33a), N_1 and N_2 map as recursive prosodic words (minimal and maximal), the NP maps as a phonological phrase and the preposition is a free clitic. In such configuration, binarity is violated because the NP contains only one constituent mapped as a prosodic word, and Match is also violated because the phonological phrase corresponding to the NP also dominates the free clitic. The binarity violation can be avoided by mapping the NP as a prosodic word, which is what is shown in (33b). This turns the clitic into an affixal clitic because it is dominated by a prosodic word but it is also a sister to a prosodic word. In this case, the Match constraint is violated

¹⁸ What is meant by a *morphologically branching host* is a host that is an X^0 derived from another X^0 element.

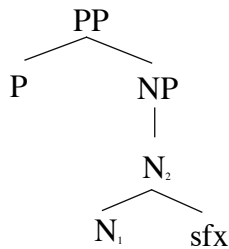
because the NP is not mapped as a phonological phrase, and because the prosodic word dominating N_2 dominates the proclitic in addition to the syllables belonging to N_2 . However, this parse is preferred to (33a) since binarity is not violated. Finally, (33c) is parallel to the preferred candidate for morphologically simple hosts in (24b) in that the proclitic is incorporated into the prosodic word of its host. This option here would not also violate binarity, but it would violate the Match constraint at the level of N_1 , N_2 , and NP. As such, this option has more violations than (33b) and is not optimal.

(33)

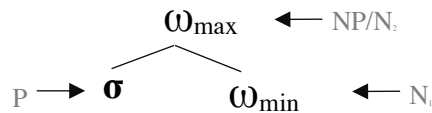
[PP za [NP rad-nike]]	BinMin(ϕ , ω)	Match- α
a. (za ((rad) ω nike) ω) ϕ	*	*
b. \rightarrow (za (rad) ω nike) ω		**
c. (za rad-nike) ω		***

In other words, the NP does not satisfy the binary minimum to be mapped as a phonological phrase, so NP/ N_2 map as a prosodic word as well, creating a recursive prosodic word structure. The preposition is mapped as an affixal clitic, dominated by the maximal prosodic word.

(34) a. Syntactic Representation



b. Prosodic Representation



Therefore, in (29) the rule of initial High tone insertion applies within the minimal prosodic word, which contains only the toneless host. High tone spreading then applies within the maximal prosodic word, which contains both the host and the proclitic, so the proclitic gets a

rising tone. Thus, what separates the cases in (11), where the clitic gets a falling accent, and the cases in (29), where the clitic gets a rising accent preceding the same toneless root, is that in the former case the clitic is incorporated into the minimal prosodic word, while in the latter the clitic is not a part of the minimal prosodic word.

An independent piece of evidence to this effect comes from epenthesis in the examples in (35), which contain a [z]-initial root and a [z]-final clitic. In (35a-b), where the clitic is incorporated into the minimal prosodic word, [a] has to be epenthesized to break up the infelicitous [zz] sequence. In contrast, in (35e), where the clitic is not within the minimal prosodic word, the epenthesis does not take place. As (35c-d) show, regardless of what kind of accent the clitic has, such cases are not grammatical with the epenthesized vowel.

- (35) a. $\grave{u}za_zi:d$ (zì:d)
 against_wall.ACC
 ‘against the wall’
- b. $n\grave{i}za_zi:d$
 down_wall.ACC
 ‘down the wall’
- c. * $\grave{u}za_zida:ra$ (zìda:ra)
- d. * $uza\acute{a}_zida:ra$
- e. $\acute{u}z_zida:ra$
 against_builder.ACC
 ‘against the builder/next to the builder’

The blocking effect of the morphological complexity of the host is visible with nominal hosts with toneless roots followed by suffixes with a High tone. In such cases, the High tone from the suffix prevents the default initial High tone insertion from applying and it spreads to the first vowel preceding it, resulting in an initial or medial rising accent within the nominal host (36). This rising accent cannot be affected by the presence of the clitic at the level of the maximal prosodic word since the clitic does not immediately precede the spreading High tone.

(36) a. za zí:da:nje for building.ACC 'for building'	(zí:da:nje)	cf. zà_zi:d ; for_wall.ACC 'for the wall'	zá_zida:ra for_builder.ACC 'for the builder'
b. za rá:dnju for store/action.ACC 'for the store/action'	(rá:dnju)	cf. zà_ra:d ; for_work.ACC 'for the work'	zá_ra:dni:ka for_worker.ACC 'for the worker'
c. u gráđanina in citizen.ACC 'in/at a citizen'	(gráđanina) ¹⁹	cf. ù_gra:d in_city.ACC 'into the town'	
d. u medénja:k in type.of.cookie.ACC 'into the cookie'	(medénja:k)	cf. ù_me:d in_honey.ACC 'into the honey'	

As with nominal hosts with suffixes in (35c-e), when a [z]-final preposition precedes the hosts in (36), it is not possible to epenthesize the vowel [a] (37). This shows that the proclitic is not within the minimal prosodic word of the host in these cases either, just like in (29) and (35).

(37) a. *uza zí:da:nje with/against building	(zí:da:nje)
b. uz zí:da:nje with/against building 'with building'	
c. *uza rá:dnju against store	(rá:dnju)
d. uz rá:dnju against store 'against the store/next to store'	

¹⁹ Nadira Aljović (p.c.) reports that the word *građanina* is pronounced with a falling accent in her variety and she still does not have accent shift when a proclitic precedes it. This is connected to an observation by Ridjanović and Aljović (2009) that syllable count plays a role in whether the shift to the proclitic is possible in some varieties, where shifting from a four-syllabic word is not preferred. However, this restriction does not hold in all varieties, and at least in the central Bosnian variety that I am also a speaker of, it is possible to shift the accent even from a four-syllable noun (e.g. *Lokvine* and *Stranjani* are two villages next to the town of Zenica. The shift is possible in: *ú_Lokvinama* 'in Lokvine' and *ú_Stranjanima* 'in Stranjani'). How frequently individual four-syllable words are used might play a role, but this requires further investigation, so I will put it aside here.

Finally, adding derivational suffixes to nominal hosts with a lexical initial High tone as in (10) does not have an effect on the shift, as illustrated below. In such cases, the initial High tone of the root always gets realized, regardless of whether the suffix has a lexical High tone or not, and this High tone can then spread to the proclitic at the level of the maximal prosodic word.

(38) a. zá _kućicu for_house.diminutive.ACC 'for the little house'	(kùćicu)	cf. zá _kuću for_house.ACC 'for the house' cf. ú _sobu in_room.ACC 'in(to) the room' cf. kód _štale: next.to_barn.GEN 'next to the barn'
b. ú _sobaricu in_chambermaid.ACC 'in/at the chambermaid'	(sòbaricu)	
c. kód _štalice: next.to_barn.diminutive.GEN 'next to the little barn'	(štàlice:)	

To summarize, in the BCS dialect that allows accent shift to proclitics investigated in this paper, clitics map to prosody in three different ways, proposed in the literature (see e.g. Inkelas and Zec 1991; Selkirk 1996). The precise prosodic category that can immediately dominate a proclitic in the prosodic structure depends on the syntactic (and as a result prosodic) context the proclitic finds itself in. The prosodic mapping of proclitics depends on the morphosyntactic complexity of the host, and has consequences for the interaction of proclitics with the accent of the host. The difference between this kind of shifting dialects and non-shifting dialects is then that in non-shifting dialects, clitics map as free clitics even with simple hosts (i.e. in such dialects phonological phrases do not have to dominate two prosodic words (cf. (20))).²⁰ As a result, morphological and syntactic complexity of the host has no effect on the clitic mapping or accent shift in such dialects.

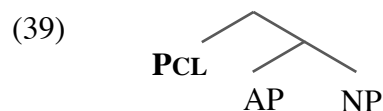
²⁰ In OT accounts, this would be captured by ranking BinMin over Match.

In the following section I return to the environments with adjectival hosts noted above, examining how the mobility of the host affects the prosodic mapping of clitics and accent shift. Specifically, I argue that a clitic preceding a syntactically mobile host maps differently from a clitic preceding an immobile host.

3.2. Accent shift with syntactically mobile and inert hosts

In addition to the syntactic complexity of the host, another syntactic property of the host that affects the mapping of clitics to prosody and the accent shift in question is the syntactic mobility of the host. This is reflected in environments where a preposition immediately precedes an attributive AP. Such contexts have not been discussed in the previous accounts of the phenomenon (Zec and Inkelas 1991; Selkirk 1996; Zec 2005), but they deserve special attention because they shed light on the question of whether prepositions cliticize to their hosts in the syntax or only in prosody and whether a preposition preceding an NP with an attributive adjective precedes a branching or a non-branching element in the output of the syntax.

Regarding accent shift, it was shown in the previous section that a preposition preceding a syntactically branching host cannot surface accented. Now, a preposition preceding an attributive AP precedes a branching NP in its base position.



Based on the prosodic mapping mechanism developed above, the expectation is that the clitic should map as a free clitic in such contexts, hence it should be unable to take over the accent from the adjective immediately following it. Surprisingly, in such configurations the preposition can take over the accent from the adjective, as shown below with various adjectives, indicating

that the preposition enters the prosodic word of the adjective immediately following it in such contexts.

- (40) a. **ú**_sta:ro:j kùći (stà:ro:j)
 in_old.LOC house.LOC
 ‘in the old house’
- b. **zá**_veliku: ùtrku (vèliku:)
 for_big.ACC race.ACC
 ‘for the big race’
- c. **kód**_ovo:g mòsta (òvo:g)
 next.to_this.GEN bridge.GEN
 ‘next to this bridge’
- d. **préd**_naši:m sìnovima (nàši:m)
 in.front.of_our.LOC sons.LOC
 ‘in front of our sons’
- e. **zbóg**_nje:ne: djéce: (njè:ne:)
 because.of_her.GEN children.GEN
 ‘because of her children’
- f. **íz**_mnogi:h gràdo:va: (mnògi:h)
 from_many.GEN cities.GEN
 ‘from many cities’

The shift is, however, not unconstrained. Just like with nominal hosts, further branching within the AP blocks the shift. This is illustrated below with contexts where the AP immediately following the preposition contains an intensifying adverb. Note that other conditions for the shift are met here since the adverbs in (41) have an initial falling accent, which indicates that they have an initial lexical or assigned High tone. The impossibility of having either a falling or a rising accent on the preposition in such cases indicates that the preposition is outside of the prosodic word of the adverb contained in the AP immediately following it.

- (41) a. *zà_puno vècu: cijé:nu
 b. *zá_puno vècu: cijé:nu
 c. za pùno vècu: cijé:nu
 for a.lot bigger price
 ‘for a much higher price’
 d. *ù_malo mànjo:j mjèri
 e. *ú_malo mànjo:j mjèri
 f. u màlo mànjo:j mjèri
 in a.little smaller measure
 ‘a little bit less’

Interestingly, with adjectival hosts, the branching of the AP is not the only condition influencing the accent shift. Even when the AP that immediately follows the proclitic does not branch, the shift is not always possible. Consider the examples in (42), where two descriptive adjectives modify the same noun and the accent cannot shift from the first adjective.

- (42) a. *ú_sta:ro:j vèliko:j kùci (stà:ro:j)
 in_old.LOC big.LOC house.LOC
 Intended: ‘in the old big house’
 b. *ú_veliko:j stà:ro:j kùci (vèliko:j)
 in_big.LOC old.LOC house.LOC
 Intended: ‘in the big old house’
 c. *zá_dugu: crvenu: háljinu (dùgu:)
 for_long.ACC red.ACC dress.ACC
 Intended: ‘for the long red dress’
 d. *kód_lije:pe: bìstre: rijéke: (lìje:pe:)
 next.to_beautiful.GEN clear.GEN river.GEN
 Intended: ‘next to the beautiful clear river’

However, it is not merely the number of adjectives that affects the shift here. Crucially, the shift is not always blocked when a proclitic precedes two adjectives. In particular, BCS possessives, demonstratives, and some quantifiers are morphologically and syntactically adjectives (Zlatić

1997; Bošković 2012; Despić 2013). As illustrated in (43), when adjectives modifying the same noun belong to different classes, accent shift is possible.

- (43) a. **ú**_našo:j stà:ro:j kùcí (nàšo:j)
 in_our.LOC old.LOC house.LOC
 ‘in our old house’
- b. **ú**_ovo:j stà:ro:j kùcí (òvo:j)
 in_this.LOC old.LOC house.LOC
 ‘in this old house’
- c. **ú**_ono:j stà:ro:j kùcí (òno:j)
 in_that.LOC old.LOC house.LOC
 ‘in that old house’
- d. **ú**_to:j stà:ro:j kùcí (tò:j)
 in_that.LOC old.LOC house.LOC
 ‘in that old house’
- e. **ú**_svako:j stà:ro:j kùcí (svàko:j)
 in_every.LOC old.LOC house.LOC
 ‘in every old house’
- f. **ú**_pe:to:j stà:ro:j kùcí (pè:to:j)
 in_fifth.LOC old.LOC house.LOC
 ‘in the fifth old house’
- g. **ú**_kojo:j stà:ro:j kùcí (kòjo:j)
 in_which.LOC old.LOC house.LOC
 ‘in which old house’
- h. **ú**_mnogi:m stà:ri:m kùćama²¹ (mnògi:m)
 in_many.LOC old.LOC houses.LOC
 ‘in many old houses’

Thus, unlike with nominal hosts where only the complexity of the host matters for prosodic mapping, with adjectival hosts what seems to matter is a combination of factors: the number of adjectives, the type of adjectives, as well as the complexity of the first AP following the preposition. However, although the prosodic mapping with adjectives on the surface seems to be quite different from the mapping with nominal hosts, if we examine the paradigm with adjectival hosts more closely, the conditions on the mapping of the *output* of the syntax to prosody in both

²¹ Nadira Aljović (p.c.) reports that the shift with *mnogim* is degraded in her variety.

cases turn out to be the same. That is, what matters in both cases is the complexity of the host a proclitic precedes in the output of the syntax, rather than in its base position.

To see this more clearly, let us compare the contexts in (40)-(43), illustrating accent shift from adjectives, to another operation available in BCS. It has been observed that languages without articles, like BCS, may allow discontinuous NPs in which the attributive adjective is separated from the noun it modifies (44a) (Uriagereka 1988; Corver 1992; Bošković 2005, 2013a). The currently standard analysis of this phenomenon is that the adjective undergoes syntactic movement out of the NP in which it is base generated, an operation referred to as left-branch extraction (LBE; Bošković 2005)²². Bošković (2005) notes that such extraction is not

²² Alternative analyses treat this phenomenon as remnant movement (Franks and Progovac 1994; Abels 2003a) or scattered deletion (Fanselow and Čavar 2002). While I adopt the extraction analysis, as it seems to capture the pattern to be discussed more elegantly, to tease these different analyses apart would go beyond the scope of the paper. I merely note here that a number of arguments for the extraction analysis come from contexts where moving the adjective alone and moving the whole NP containing the adjective yield different interpretations. To illustrate with one such argument, Despić (2015) discusses the paradigm in (i)-(iii). *Jedan* can only have wide scope in (i). In (ii), *jedan* can have either narrow or wide scope. Importantly, in (iii), *jedan* can only have wide scope, just like in (i), where the whole NP is in situ. If in (iii), the whole NP remnant containing the adjective and a trace of N moved to the beginning of the sentence, we would expect (iii) to pattern with (ii), where it is clear that the whole NP is fronted, regarding scope interpretation (the same holds for the scattered deletion analysis).

(i) *Jedan naš učenik je vidio svaku utakmicu na svjetskom prvenstvu.*

one our student is seen every game on world cup

‘One of our students saw every game on the World Cup.’

(ii) *Svaku utakmicu na svjetskom prvenstvu je jedan naš učenik vidio.*

every game on world cup is one our student seen

‘Every game on the World Cup, one of our students saw.’

(iii) *Svaku je jedan naš učenik vidio t utakmicu na svjetskom prvenstvu.*

every is one our student seen game one world cup

‘One of our students saw every game on the world cup.’

Bošković (2005) and Stjepanović (2010, 2012) also give a number of relevant arguments which support the LBE analysis over the remnant movement and the scattered deletion analyses. However, since doing a detailed comparison of different approaches to discontinuous NPs is beyond the scope of the paper, I will not go further into these issues here. All that matters for this paper is the availability or unavailability of separation of the adjective immediately following the preposition from the rest of the NP. However, as it will become clear below, the phenomena to be discussed require a syntactic analysis of the separation of the adjective from the noun; it would be difficult to capture the data discussed below by assuming a post-syntactic operation.

possible with two descriptive adjectives modifying the same noun, as illustrated with (44b-c).²³ However, when adjectives belong to two different classes (e.g. demonstrative vs. descriptive), such extraction improves, as illustrated with extraction of a demonstrative and a quantifier in (44d-e), regardless of the presence of the descriptive adjective in the same NP.²⁴

- (44) a. Staru_i je voljela t_i kuću.
 old is loved house
 ‘She loved the old house./It is the old house that she loved’
- b. *Staru_i je voljela t_i veliku kuću.
 old is loved big house
 ‘Intended: She loved the old big house.’
 cf. Voljela je staru veliku kuću.
- c. *Veliku_i je voljela t_i staru kuću.
 big is loved old house
 ‘Intended: She loved big old house.’
 cf. Voljela je veliku staru kuću.
- d. Ovu_i je voljela t_i veliku kuću.²⁵
 this is loved big house
 ‘She loved this big house.’
- e. Svaku_i je voljela t_i veliku kuću.
 every is loved big house
 ‘She loved every big house.’

Crucially, the contexts in (40) and (43), where the accent shift is allowed, are exactly the same as the contexts where LBE is allowed (44a,d,e); and the contexts in (42), where the accent shift is not allowed, are exactly the same as the contexts where LBE is disallowed (44b-c).

Furthermore, in constructions with non-adjectival quantifiers in BCS, which have been argued to project a QP above the NP (see Despić 2011; M. Takahashi 2011; Bošković 2012, 2013b; Bošković and Šener 2014; *inter alia*, and the discussion below), it is possible to move the

²³ More precisely, it is not possible when none of the adjectives is a wh-element or focused; see Bošković (2005) on why this matters.

²⁴ Demonstratives and some quantifiers are morphologically and syntactically adjectives in BCS (see Zlatić 1997; Bošković 2005, 2013b; and Despić 2011). I will therefore refer to them as adjectives in the text.

²⁵ Nadira Aljović (p.c.) finds (44d-e) as degraded as (44b-c).

adjective across the quantifier (see e.g. Franks 1994). In such contexts, accent shift is possible, as illustrated below with possessive, descriptive and demonstrative adjectives in (45).

- (45) a. Glèdao: je **ú**_Ma:rkovi:h_i pè:t t_i stúdena:ta:. (Mà:rkovi:h)
 looked.at is in_Marko's.GEN five students.GEN
 'He was looking at five students of Marko's.'
- b. Glèdao: je **ú**_nje:ni:h_i pè:t t_i stúdena:ta:. (njè:ni:h)
 looked.at is in_her.GEN five students.GEN
 'He was looking at five students of hers.'
- c. Razočá:rao: se **ú**_novi:h_i pè:t t_i stúdena:ta:. (nòvi:h)
 disappointed SE in_new.GEN five students.GEN
 'He was disappointed in the five new students.'
- d. Ží:vjeli su **ú**_ovi:h_i pè:t t_i gràdo:va:. (òvi:h)
 lived are in_these.GEN five cities.GEN
 'They lived in these five cities.'

(45) also represents a context where the adjective serving as a host to the proclitic can extract from the NP and the accent can shift to the proclitic.

In addition to this, it is also possible for a preposition to take over the accent from a numeral following it, if the numeral has a falling initial tone in the absence of the preposition

(46) (cf. jédan 'one' → *ú_jedan/u jédan 'in one').

- (46) a. Dóšao: je **ù**_dva:/tri:/pe:t. (dvà:, trè:, pè:t)
 came is in two/three/five
 'He came at five o'clock'
- b. Stìgli su **zà**_pe:t dá:na/zà_tri: dà:na.
 arrived are for_five days/for_three days
 'They arrived in five days/in three days.'

Crucially, BCS numerals can move away from the noun, as in (47).

- (47) Pè:t sam **č**èkao: dá:na:.
 five am waited days
 'I have waited for five days.'

Thus, the examples in (46)-(47) represent another context where the host can move and where it is also possible to shift the accent to the preposition.

This striking parallelism between the contexts where accent shift is available and the contexts where it is possible to separate the adjective from the noun it modifies leads to the following generalization:

(48) A proclitic can take over the accent from an adjective if and only if the adjective can be separated from the noun it modifies.²⁶

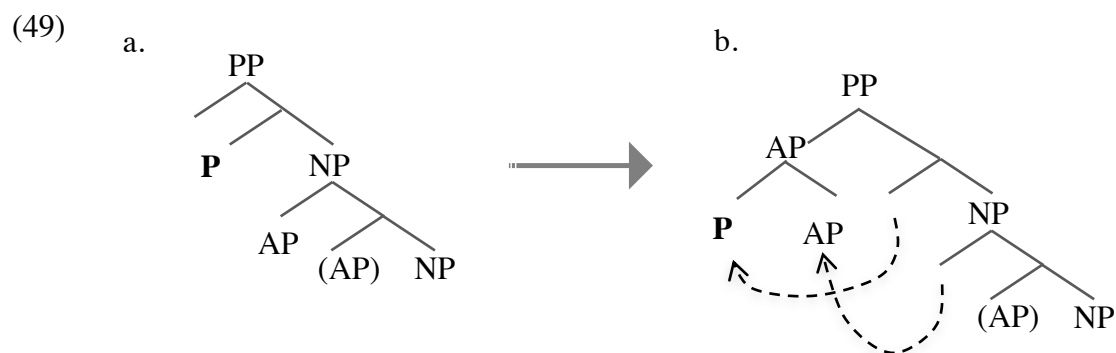
The generalization in (48) showing that it is possible for the accent shift to occur precisely in those contexts where it is possible to move the adjective reveals why apparent branching within the host in the context of modifying adjectives does not block accent shift in all cases. Importantly, a preposition preceding a mobile adjective (see (40), (43), and (45)) behaves as if it precedes a syntactically non-branching element in the output of the syntax (cf. (10)-(11)). This means that it maps to prosody as an internal clitic (17) or an affixal clitic (34), depending on the morphological complexity of the adjective. As a result, such a clitic interacts with the accent of the adjective. In contrast, a preposition preceding an immobile adjective (see (42)) behaves as if it precedes a branching element in the output of the syntax (cf. (12)/(13)). In this case the preposition maps as a free clitic as in (18)/(28), hence it is outside of the prosodic word of the adjective and it cannot interact with its accent.

As argued above based on nominal hosts, the mapping of clitics in (17) and (18) depends on the complexity of their host in the output of the syntax. The paradigm with adjectival hosts then raises an important question: How is it possible to get the difference in the branching of the hosts between the contexts in (40)/(43)/(45) and (42), where, on the surface, the hosts in all the

²⁶ I take the separation of the adjective from the noun here to take place by syntactic movement. However, the precise mechanism of how that occurs is not crucial for the correlation. What matters here is that the AP host separates from the rest of the NP in the syntax, prior to the prosodic mapping (See here footnote 22).

cases appear to be of the same level of complexity? Notice that if the host of the preposition were only the AP immediately following it in (40), (42), (43), and (45), accent shift would be expected to occur in all these cases. On the other hand, if the host of the preposition in (40), (42) and (43) were the whole NP that follows it or the whole QP that follows it in (45), accent shift would be expected to be blocked in all four cases. The key ingredient that makes the difference between the two types of contexts in (40)/(43)/(45) and (42) is left-branch extraction. What is apparently happening here is that the host is just the AP in (40), (43), and (45), where accent shift occurs, but the host is the whole NP in (42), where it does not occur. Crucially, what matters for the split between the two types of contexts is the mobility of the host captured by the correlation in (48). The preposition precedes an adjective that can be separated from the noun it modifies in (40), (43), and (45), but not in (42). Given this, I argue that in (40), (43), and (45) the adjective moves to a position c-commanding the preposition (e.g. SpecPP), and then the preposition adjoins to it.²⁷

²⁸



²⁷ Similar analyses where the moving head does not adjoin to a head have been proposed for a variety of other phenomena, see Zwart (1995), T. Takahashi (2001), Matushansky (2006), Stjepanović (2014). Although technical details in these analyses differ, I follow these approaches in that a moving head does not necessarily have to adjoin to a head (i.e. move to a head position).

²⁸ I will return to what motivates the movement of the adjective in Section 4.1.1.

Following standard assumptions about c-command, where segments do not confine the c-command domain (see also Kayne 1994)²⁹, after the preposition moves and adjoins to the adjective in (49b), the preposition c-commands everything that the adjective c-commands (including the position where P is first merged). Crucially, the preposition in (40), (43), and (45) is a sister to a branching NP in situ, but after it cliticizes to the AP, it reaches PF as adjoined to a non-branching AP that contains only an adjective. As a result, the newly created constituent P+AP can map to the prosodic structure as in (17), i.e. the preposition preceding a non-branching AP can enter the prosodic word of the adjective and interact with its accent. In the cases where the adjective is immobile (42), hence it cannot move from below the preposition, the preposition always reaches PF preceding a branching element, the whole NP. This is why in (42) the preposition can only map to prosody as in (18), i.e. it cannot enter the prosodic word of the initial element in the branching NP, the adjective, hence it cannot interact with its accent. What is important here is that, when the adjective stays in situ (42), the host of the preposition in the output of the syntax is syntactically complex; crucially, moving the adjective and adjoining the preposition to it makes the host of the preposition in the output of the syntax simple in (40) and (43). Under the movement analysis, prosodic mapping of prepositions in the context of adjectival hosts is then parallel to the examples with nominal hosts, where a preposition enters the prosodic word of a noun following it if the NP containing the noun contains nothing else, but it does not enter the prosodic word of a noun followed by an NP, PP, or a relative clause, or a noun involved in a coordinate structure (see (10)-(18) in Section 3.1).

²⁹ I.e. X c-commands Y if X excludes Y and every category that dominates X dominates Y (X excludes Y if no segment of X dominates Y; X dominates Y if Y is a constituent of X). As a result, α adjoined to β c-commands everything that β does.

The analysis that is supported by the prosodic facts discussed here has an interesting prediction. If the preposition cliticizes onto the adjective in the syntax³⁰, syntactic operations (including movement) should treat the newly created P+AP complex as a syntactic constituent. In other words, P+AP should be able to move together in the syntax. This is indeed what we find in BCS. Consider (50):

- (50) a. U staroj_i su živjeli t_i kući.
 in_old.LOC are lived house.LOC
 ‘They lived in the *old* house.’
- b. U koju_i je ušao t_i sobu?
 in_old.ACC is entered room.ACC
 ‘Which room did he enter?’
- c. U kojih_i ste boravili t_i pet gradova?
 in_which.LOC are spend.time five cities.LOC
 ‘Which five cities have you spent some time in?’

These kinds of constructions have most often been treated as regular LBE of the AP that carries the preposition with it³¹ (see Borsley and Jaworska 1988 for Polish; Corver 1992 and Bošković 2005 for BCS; but see also Franks and Progovac 1994; Abels 2003a; Fanselow and Ćavar 2002 for alternative accounts). The availability of syntactic movement for the P+AP complex indicates that the preposition cannot incorporate into the adjective only in prosody, which further supports the analysis in (49). Furthermore, I take the preposition to adjoin to the whole AP rather than the

³⁰ Although BCS prepositions are prosodic clitics, the trigger for the adjunction of P to the moved AP that c-commands it in the syntax seems to be syntactic rather than phonological, since this adjunction needs to take place even when some overt material remains in the NP after moving the adjective (there is also the issue of lookahead if prosody were to be taken to drive syntactic movement).

(i) *Koje_i je gledala u t_i studente?
 which is looked.at in students
 Intended: ‘Which students was she looking at?’
 Cf. [U koje] je gledala studente?

While I leave the issue open here, the motivation for P adjunction to the element that moves over it could be Bošković’s (to appear) generalized condition on functional heads that bans stranded functional heads in the syntax (Bošković in fact discusses BCS P-adjunction in this context; see the work in question for details of the proposal).

³¹ See Bošković (2005) for a number of parallelisms between this extraction and LBE.

A head because of examples like (51), where the preposition adjoins to a complex AP with an intensifier, after which the complex P+[Adv+A] undergoes movement.

- (51) [U jako lijepoj]_i su živjeli [_{PP} t_i kući].
in very beautiful.LOC.SF are lived house.LOC
'They lived in a very beautiful house.'

In addition to upward cliticization, Bošković (2013a) also considers syntactic downward cliticization for these constructions. Under such an analysis, the preposition would lower to the highest AP in its NP-complement in the syntax, and subsequently the P+AP would take the option of undergoing further LBE in (50) and (51). However, the correlation between the mobility of adjectives and accent shift established above indicates that the preposition does not cliticize in a downward fashion. Assuming that APs are NP-adjoined (or in the specifiers of functional projections), all NPs in (40), (42), and (43) would look the same from the point of view of a lowering preposition with respect to the branching of the element following the preposition. Thus, the expectation would then be that the preposition cliticizes to the highest adjective in all of these cases. However, it would then be difficult to differentiate (40)/(43)/(45) and (42). In contrast to this, upward cliticization I argued for above captures the contrast, correctly predicting the grammaticality of (40), (43), and (45), and crucially predicting the ungrammaticality of (42). Given that the AP has to move from below the preposition to SpecPP for the preposition to cliticize to it in an upward fashion, (42) is ruled out under this analysis because the AP immediately following the preposition is immobile.

4. Implications of the analysis and phasal complement extraction

In this section, I return to nominal hosts and discuss some consequences that the upward cliticization analysis has for these contexts, also addressing the question of what motivates the

movement of hosts to SpecPP prior to upward P-cliticization. More generally, I investigate whether a complement of a phasal head can extract, exploring a number of cases where a phasal complement is headed by a clitic.

It was shown above that the preposition interacts with the accent of the noun in examples like (52), suggesting that they are in the same prosodic word.

- (52) **ú**_kući (k**ù**ći)
 in_house.LOC
 ‘in the house’

Under the clitic mapping mechanism I proposed in Section 3.1, there is no need to assume that the NP moves to SpecPP for the clitic to attach to it. However, given that BCS allows the mechanism of upward P-cliticization, as I argued above based on adjectival hosts, there are two predictions of this analysis with respect to nominal hosts. The first prediction is that upward P-cliticization should be available with nominal hosts as well. That is, NP is expected to be able to move to the position c-commanding the preposition (SpecPP), with the P cliticizing to it in an upward fashion, on a par with the contexts with adjectival hosts. The second prediction is that, parallel to P+AP movement from SpecPP (50)/(53a), the newly created P+NP complex should also be able to undergo further extraction from SpecPP, as in the hypothetical case in (53b).

- (53) a. P+AP [_{PP} t_P + t_{AP} [_{P'} t_P [_{NP} t_{AP} [_{NP} N]]]]]
 b. P+NP..... [_{PP} t_P + t_{NP} [_{P'} t_P t_{NP}]]

However, when attempting to test these predictions, we immediately face a couple of obstacles. First, with adjectival hosts, it was possible to tease apart whether a preposition undergoes upward P-cliticization to the adjective ([[P+AP]...NP]) or not (P+[AP NP]) based on whether or not it interacts with the accent of the adjective. With nominal hosts, the interaction of the preposition with the accent of the noun cannot be used as a diagnostic for cliticization because P+NP in SpecPP is expected to map to prosody in the same way as P preceding an NP in situ.

Specifically, the preposition would interact with the accent of a non-branching NP in both of these configurations.

Another indicator that syntactic cliticization takes place with adjectival hosts was that further extraction of P+AP from SpecPP is possible as in (50), where P+AP ends up clearly separated from the rest of the PP. On the other hand, with nominal hosts, word order after syntactic movement of the P+NP complex would be identical to the word order after moving the whole PP. Therefore, a different diagnostic for P-cliticization is needed in these cases.

What we need to tease apart the P+NP complex movement and PP extraction is to find a context where PP cannot extract but P+NP can. That is, a context where PP extraction is supposed to be blocked but it appears that PP is moving would suggest that these two types of extraction are separate processes. Interestingly, BCS does provide such cases, all of which involve PPs as phasal complements. I turn to these contexts in the following section.

4.1. (Im)mobile phasal complements

Phases are taken to determine locality domains for syntactic operations as well as what part of the structure is sent to spell-out once a phase is completed. Regarding syntactic movement, there are two crucial locality constraints. Chomsky (2000) proposes the *Phase Impenetrability Condition* (PIC):

- (54) In phase α with head H, the domain of H is not accessible to operations outside α ; only H and its edge are accessible to such operations.

As a consequence of the PIC, movement of any element out of a phase has to proceed via the edge of the phase. In Chomsky's account, phase heads may be assigned an EPP feature, which moving elements satisfy by passing through the phase edge. In other words, movement steps cannot be too long.

In addition, a number of researchers have argued that movement steps cannot be too short either (Bošković 1994, 1997, 2005; Saito and Murasugi 1999; Grohmann 2003; Abels 2003a; Ticio 2005; *inter alia*); a constraint dubbed *anti-locality* by Grohmann (2003). Specifically, Bošković argues that a moving element has to cross at least one maximal projection, i.e. moving within a phrase, or moving to a higher phrase where the movement crosses only a segment of the phrase, is too short.

What is of particular interest for our purposes here is that the interaction of the two constraints can render extraction of certain elements out of a phase impossible. One such context is discussed by Abels (2003a), who establishes a generalization that complements of phasal heads do not move. This is illustrated in (55) by the impossibility of IP extraction out of a CP phase. Crucially, to move out of a phase XP, a phasal complement has to move to SpecXP due to the PIC. However, such movement is ruled out by anti-locality as too short.

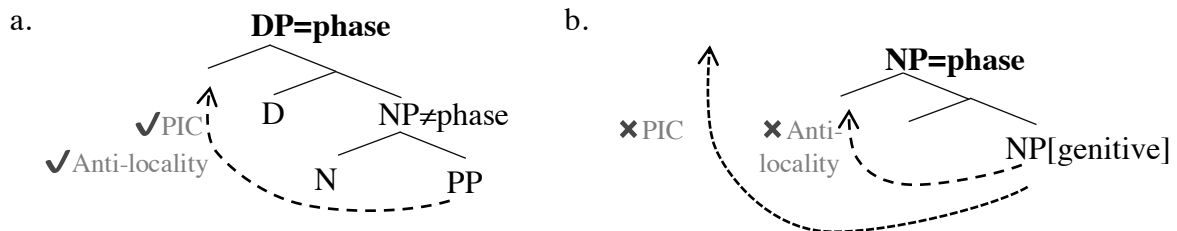
- (55) a.*[_{CP} IP_i [_C C t_i]]
 b.*[_{IP} Anything will happen]_i, nobody believes [_{CP}t_i[_C' that t_i]].

With respect to the phasal status of extended projections of various categories, there are two lines of research in the literature. While Chomsky (2000) assumes that vP and CP are phases regardless of the syntactic context they occur in, a number of researchers have recently argued that the phasehood of a phrase XP can depend on its syntactic context (e.g. Bobaljik and Wurmbrand 2005; Bošković 2005, 2013b; Gallego and Uriagereka 2007; Despić 2011; den Dikken 2007; M. Takahashi 2011, *i.a.*). In this regard, Bošković (2013b) argues that all lexical categories (N, V, A, P) project phases, and that the highest phrase in the extended projection of every lexical category is a phase. Crucially, the amount of structure projected within the extended domain of a lexical head can vary cross-linguistically as well as within a single language. This means that phrases that are phasal complements in the extended domain of a

lexical category in one context do not necessarily function as phasal complements in a different context. Given Abels's generalization, such variability in the amount of structure in the extended domain of a lexical category implies that extraction possibilities out of the same phrase can also vary in different contexts. Bošković demonstrates the contextuality of phasehood and immobility of phasal complements with respect to a contrast between languages like English and languages like BCS.

An important property of BCS and more generally languages without articles, which distinguishes them from languages like English, is that they lack a DP layer (see Corver 1992; Zlatić 1997; Stjepanović 1998; Bošković 2005, 2012; Marelj 2008; Despić 2011, 2013; M. Takahashi 2012; Runić 2014; *i.a.* for BCS). Thus, the nominal domain in these two types of languages is of different size. Bošković (2013b) argues that DP is a phase in languages with articles, as the highest projection in the nominal domain. However, in languages like BCS that lack the DP layer, the highest projection in this domain is NP and as such, it is a phase in the nominal domain in these languages. Thus, while in English N is not a phasal head, in BCS N is a phasal head. A major consequence of this is that a complement of a noun should be able to extract in languages with articles since the PIC and anti-locality would allow such complement to move through the phasal edge, SpecDP; but a complement of a noun should not be able to extract in languages without articles since such movement would violate either the PIC or anti-locality.

(56) *N-complement extraction*



In English, a DP language, a nominal complement indeed can move, as illustrated in (57) with extraction of a PP complement of N. The PP in such cases is forced to move to SpecDP to satisfy the PIC. This movement also satisfies anti-locality since it crosses a full maximal projection (56a).

(57) ?[To which problem]_i did you discover [solutions t_i].

Regarding languages without articles, the prediction of this phasal approach and Abels's generalization that the complement of a noun should be immobile in these languages is borne out for BCS NPs with genitive-marked complements. Such complements cannot undergo movement, as shown in (58) (see Bošković (2013b)). In this case, NP is the phase as the highest projection in the extended domain of N. The PIC thus forces the N-complement to move to SpecNP, but this movement is ruled out by anti-locality as too short (56b).

- (58) a. ?*[Ovog studenta]_i sam pronašla [_{NP} slike t_i].
 this.GEN student.GEN am found pictures.ACC
 ‘Of this student I found pictures.’
- b. ?*[Kojeg studenta]_i si pronašla [_{NP} slike t_i]?
 which.GEN student.GEN are found pictures.ACC
 ‘Of which student did you find pictures?’
- c. ?*[Kojih studenata]_i si pročitao [_{NP} eseje t_i]?
 which.GEN students.GEN are read essays
 ‘Of which students did you read essays?’
- d. *[Koje djevojke]_i si vidjela [_{NP} kaput t_i?
 which.GEN girl.GEN are seen coat
 ‘Of which girl did you see coat?’

However, this prediction is not borne out with all N-complements in BCS. In addition to nouns taking genitive-marked NP complements, many nouns in BCS also take PP complements. Under this approach to phases, such complements are also expected to be immobile because just like the

genitive-marked complement in (58), they are expected not to be able to move out of the NP due to the PIC/anti-locality interaction. Nevertheless, BCS examples like (59) are grammatical.

- (59) [Na koje pitanje] želiš [NP odgovor t_i]?
 to which.ACC question.ACC want answer.ACC
 ‘Which question do you want an answer to?’

Furthermore, examples parallel to (58) also become possible if there is an overt preposition assigning genitive in the extracted complement (Nadira Aljović; Amna Brdarević-Čeljo p.c.).³²

- (60) a. [Od ovog studenta]_i sam pronašla [NP slike t_i]
 of this.GEN student.GEN am found pictures.ACC
 ‘Of this student I found pictures.’
 b. [Od kojeg studenta]_i si pronašla [NP slike t_i]?
 of which.GEN student.GEN are found pictures.ACC
 ‘Of which student did you find pictures?’
 c. [Od kojih studenata]_i si pročitao [NP eseje t_i]?
 of which.GEN students.GEN are read essays
 ‘Of which students did you read essays?’
 d. [Od koje djevojke]_i si vidjela [NP kaput t_i]?
 of which.GEN girl.GEN are seen coat
 ‘Of which girl did you see coat?’

³² Note, however, that only theme, agent, and alienable possession genitive complement extraction can be improved by adding the preposition *od*, while extraction of genitives denoting time, location, and inalienable possession cannot be improved by adding the preposition. (Having the preposition *od* in the complement of N in situ seems to be degraded in (60), as well as in (ib), (iib), and (iiib), but this requires more testing with native speakers.)

- (i) a. *[Kojeg stoljeća]_i su puštali [NP muziku t_i]?
 which.GEN century.GEN are played music
 b. *[Od kojeg stoljeća]_i su puštali [NP muziku t_i]?
 of which.GEN century.GEN are played music
 (ii) a. ?*[Koje zemlje]_i su posjetili [NP šume t_i]?
 which.GEN country.GEN are visited forests
 b. *[Od koje zemlje]_i su posjetili šume t_i ?
 of which.GEN country.GEN are visited forests
 (iii) a. *[Kakvih očiju]_i je upoznala [NP momka t_i]?
 what.kind.GEN eyes.GEN is met guy
 b. *[Od kakvih očiju]_i je upoznala [NP momka t_i]?
 of what.kind.GEN eyes.GEN is met guy

On the surface, the extraction in (59)-(60) seems to be a problem for Bošković's approach to phases and Abels's generalization regarding phasal complement extraction. However, as noted above, this kind of situation is exactly what is expected under the upward P-cliticization analysis. In such cases, even though PP extraction is blocked due to the interaction of the PIC and anti-locality, if the NP complement of P moves to SpecPP, P can cliticize to it and P+NP can then move further (61). This gives an illusion that PP moves, because the whole NP, not just its part (as with APs), moves and carries along the preposition.

(61) P+NP..... [_{PP} t_r+t_{NP} [_P t_r t_{NP}]]

The current analysis thus resolves this potential problem for Bošković's approach to phases and Abels's generalization.

4.1.1. Porous islands

What is relevant to discuss here after introducing upward P-cliticization and the two extraordinary types of extraction, P+AP extraction and P+NP extraction, is that in both of these contexts, if the preposition stays in situ, we get ungrammatical structures. The ungrammaticality of (62a) shows that LBE cannot take place across a preposition, leaving the preposition in situ. The example (62b) shows that it is impossible to move the NP that is a complement of a preposition and strand the preposition.

(62) a. *Staroj_i su živjeli [_{PP} u t_i kùći]. / ... [_{PP} ú t_i kući]
 old.LOC are lived in house.LOC in house.LOC
 Intended: 'They lived in an/the *old* house.'

- b. *Staroj, kući su živjeli [_{PP} u t_i]
 old.LOC house.LOC are lived in
 Intended: ‘The lived in an/the old house.’

However, as I have shown above, if the preposition also moves, then both of these types of extraction are possible. That is, if the moving AP or NP picks up the preposition on the way out of the PP, then it is allowed to move out of the PP. As I have argued above, the preposition cliticizes in an upward fashion to an AP or NP that moves to SpecPP. Crucially, Chomsky (2000) suggests that only phase heads may be assigned an EPP feature. Additionally, regarding successive cyclic movement, Chomsky suggests that a phase head may be assigned an EPP feature to make successive cyclic movement possible, which ensures that elements moving out of a phase move through the phase edge. Under the contextual approach to phases discussed in the previous section, PP is also a phase. Thus, P, as a phase head, may be assigned an EPP feature. This feature also makes successive cyclic movement out of the PP possible. When an AP or an NP moves to SpecPP, it satisfies this feature. The moved element (AP or NP) either stays in SpecPP or the P+AP/P+NP complex undergoes further movement to check a feature higher in the structure; either way, movement to SpecPP is driven by the same feature. Therefore, AP and NP movement to SpecPP argued for here in contexts with upward P-cliticization has the same motivation as the first step of successive cyclic movement of AP/NP in these constructions.

Now, given that PP is a phase, both the movement of the AP adjoined to the complement of P and the movement of the NP complement of P to SpecPP prior to upward P-cliticization should actually violate anti-locality. However, it has been reported for a number of cases that movement of the head of a phase rescues locality/anti-locality violations by copy deletion of the phase head

in PF (see Bošković (2011; 2013a)).³³ More generally, Bošković establishes a generalization that a phrase that otherwise behaves as an *island*³⁴ loses its island properties if it is headed by a trace (The generalization covers a variety of crosslinguistic examples involving different categories discussed in Baker (1988), Uriagereka (1988), Corver (1992), Stjepanović (2014), and Riqueros (2013) as well). To illustrate this effect with another example, consider the examples from Galician in (63) that Bošković (2013a) discusses. Galician definite DPs as in (63a) are islands for extraction, so the PP with a *wh*-element cannot undergo movement here. Importantly, Galician article can move from D and incorporate into the verb, as in (63b). In such cases, extraction out of the DP is possible, so the PP with a *wh*-element can undergo movement in (63b).

- (63) a. *e de quén, viche [_{DP} o retrato t_i]?
 and of whom saw.you **the** portrait
 b. e de quén, viche-**lo**, [_{DP} t_i retrato t_i]?
 and of whom saw.you-**the** portrait
 ‘so, who have you seen the portrait of?’ (Uriagereka 1988: 81)

A couple of examples of this type from Baker (1988), discussed by Bošković (2013b), concern P-incorporation in Chichewa and N-incorporation in Mohawk. Regarding Chichewa, Baker (1988) notes that prepositions in this language can either be free standing items (64a) or they can incorporate into the verb (64c). Baker also notes that PPs are islands for extraction when P is not incorporated. Thus, it is not possible to extract the complement of P, stranding the preposition in (64b). However, when the P incorporates into the verb, PP ceases to be an island and extraction of the P-complement is possible as in (64d).

³³ The basic idea Bošković suggests in this respect is that the violations induce *-marking of the head of the phase (a mechanism similar to Chomsky’s (1972) formalization); moving the head then leads to deletion of the *-marked element under copy deletion. The deletion of the *-marked phase head rescues the derivation in the same way ellipsis rescues locality violations ((Ross 1969), but see Abels (2003b) and Barros, Elliott, and Thoms (2014)).

³⁴ The term ‘island’ is used here in the broadest sense ‘any domain that blocks movement’, regardless of whether such domain is also a phase or not.

(64) a. Msangalatsi a-ku-yend-a [_{pp} ndi ndodo]. (Chichewa)
 entertainer SP-PRES-walk-ASP with stick
 ‘The entertainer is walking with a stick.’

b. *Ndodo_i i-ku-yend-edw-a [_{pp} ndi t_i].
 stick SP-PRES-walk-PASS-ASP with
 Intended: ‘The stick is being walked with.’

c. Msangalatsi a-ku-yend-**er**_i-a [_{pp} t_i ndodo].
 entertainer SP-PRES-walk-**with**-ASP stick
 ‘The entertainer is walking with a stick.’

d. Ndodo_i i-ku-yend-**er**_i-edw-a [_{pp} t_i t_j].
 stick SP-PRES-walk-**with**-PASS-ASP
 ‘The stick is being walked with.’

(Baker 1988: 260)

Furthermore, Baker (1988) discusses a number of languages where a possessor can be separated from the possessed N only if the N incorporates into the verb, as in Mohawk in (65). If we take *kvtsyu* ‘fish’ and *nya’t* ‘throat’ in (65) to originate in the same NP, then this is another case where extracting the head of an island voids islandhood.³⁵

(65) Kvttsyu v-kuawa-**nya’t**-o:’ase. (Mohawk)
 fish fut-3pS/3f-**throat**-slit
 ‘They will slit the fish’s throat.’

(Mithun 1984: 868, Baker 1988: 96)

Based on such (and other) cases, where head movement rescues a locality violation, Bošković (2013a) argues that a derivation can be saved if merely the head of the island is removed by copy deletion.³⁶ Actually, what is going on here is exactly what is going on in the BCS cases under

³⁵ Mithun (1984) and Baker (1988) do not give a minimal pair with the counterpart of (65) without N-incorporation.

³⁶ This phenomenon holds for all islands and all types of locality-of-movement violations, including PIC/anti-locality violations (see Bošković 2013a and the references cited above for further data illustrations).

consideration. Hence, in BCS the violation within a PP is not a problem because the P moves out of its base position to adjoin to its host and its copy in situ is deleted.³⁷

4.2. Other cases of apparent phasal complement movement

In this section, I turn to other cases in which upward cliticization opens the door for extraction of elements that would otherwise be immobile due to locality/anti-locality constraints, creating an illusion that a complement of a phase head moves. The cases I will discuss concern PP complements of adjectives in BCS and KP complements of quantifiers in Korean.

4.2.1. Complements of BCS adjectives

Another context where P+NP movement seems to take place in BCS is with complements of predicative adjectives. Under the contextual approach to phases discussed above, A projects a phase in its extended domain, just like other lexical categories. Regarding the amount of structure in the adjectival domain, Talić (2015, 2017) argues that the amount of structure within the extended domain of A varies cross-linguistically, but that extended projections of all lexical categories within a single language are parallel in the sense that they have a similar amount of structure. In particular, languages that have more structure in the nominal domain also have more structure in the adjectival domain. Thus, English always has a functional projection (I will call it XP) above AP, but BCS can have bare APs. This is supported by a contrast in the availability of intensifier extraction out of predicative adjectival phrases. In particular, intensifying adverbs, which originate AP-adjoined, can extract in BCS (66a) but not in English (66b). In BCS, where AP is a phase, adverbs originate at the edge of the phase, and can freely move without violating

³⁷ For a number of additional cases of this type see the works cited above.

the PIC or anti-locality. In contrast, AP is not the highest projection in the adjectival domain in English, so XP projected above AP (and the adjunction site of the adverb) is a phase. To move out of the phase, the adverb has to stop in SpecXP due to the PIC, but this step only crosses a segment of AP, hence is ruled out by anti-locality.

- (66) a. Jako_i je bio [_{AP} t_i [_{AP} ponosan na sina]].
 very is been proud of son.ACC
 ‘He was very proud of his son.’
 b. *Very_i he was [_{XP} [_{AP} t_i [_{AP} proud of his son]]].

The prediction of the contextual approach to phases and Abels’s generalization regarding complements of adjectives in BCS is then that they should not be able to move. Nonetheless, parallel to what was discussed with respect to PP complements of nouns in BCS, sentences like the one in (67) are possible.

- (67) [Na najmlađeg sina]_i je bio [_{AP} jako ponosan t_i].
 of youngest.ACC son.ACC is been very proud
 ‘Of his youngest son he was very proud.’

However, as discussed with respect to PP complements of BCS nouns, given that BCS allows the mechanism of upward P-cliticization, this is then another instance where the NP complement of a preposition itself extracts, picking up the preposition.

4.2.2. Case particles in Korean

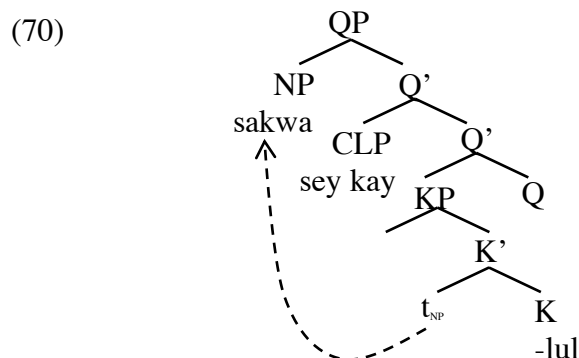
Similar to BCS prepositions, Korean Case particles appear to undergo upward cliticization, which also creates an impression that a phasal complement moves. Since Korean does not have articles, it has been argued that it also lacks the DP layer, just like BCS (Bošković 2012; Kang 2014; Yoo 2014). Nevertheless, in the presence of certain functional elements, such as numerals and Case particles, it has been argued that even languages without articles can have additional

structure in the extended projection of N (Despić 2011; Takahashi 2011; Bošković 2012, 2013b; Bošković and Şener 2014; Kang 2014, *i.a.*). Specifically, Case particles have been argued to project KP above NP in agglutinative languages like Korean and Japanese (see M. Takahashi (2011) for evidence from Japanese based on the fact that this particle can undergo movement, and can even be stranded by NP-ellipsis as the sole surviving element). Furthermore, it has been argued that in Numeral+Classifier constructions in Korean and Japanese, there is a QP above KP, the Num+CL complex being placed in SpecQP, as in the structure in (68) (see Bošković 2012; Kang 2014; Yoo 2014, Takahashi 2011, among others).

(68) [_{QP} sey kay [[_{KP} [_{NP} sakwa] -lul] Q]] (Yoo 2014: 42)
 3-CL apple -Case

In (68), QP functions as a phase as the highest projection in the extended domain of N. As a result, similarly to the prediction regarding N-complements discussed above, the contextual approach to phases predicts that KP should not be able to undergo extraction out of QP in (68), being a phasal head complement. Interestingly, the noun can precede the Num+CL complex either without or with the Case particle attached to it, as illustrated in (69a) and (69b) respectively. Yoo (2014) argues that in (69a), the NP moves to SpecQP as in (70). In (69b), both the noun and the Case particle precede Num+CL (the derivation will be discussed in (71) below).

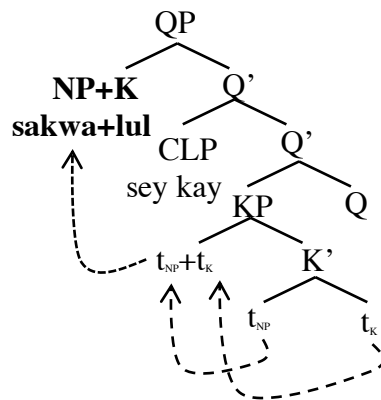
(69) a. sakwa sey-kay-**lul** b. sakwa-**lul** sey-kay
 apple 3-CL- ACC apple- ACC 3-CL (Yoo 2014: 42)



The order in (69a)/(70) is not surprising under the contextual approach to phases because the movement of the NP from the position of the complement of K to a position c-commanding the Numeral+Classifier, SpecQP, satisfies both the PIC and anti-locality. However, (69b) is more puzzling because on the surface, it appears that the whole KP moves in such cases. Assuming that QP is a phase here as the highest projection in the nominal domain, (69b) then seems to be another case of phasal complement extraction, which should be ruled out by anti-locality. It is, however, important to note here that the case particle is a clitic/affix, just like BCS prepositions. As Yoo (2014) suggests, this may then be another case where upward cliticization creates an impression that the complement of a phasal head moves.

Consider the now full derivation of (69b), given in (71).

(71)



NP first moves to SpecKP, and then K adjoins to it prior to further movement from SpecKP (71). As in the relevant BCS cases, the newly created “NP+K” complex can move further from this position, parallel to the “P+AP” and “P+NP” complexes in BCS (see (50) and (59)).³⁸

(72) Sakwa-lul Hwun-un t_i sey kay mekessta.
 apples-acc_i Hwun-top 3 cl ate
 ‘Hwun ate three apples.’

(Yong Suk Yoo, p.c.)

³⁸ It may also be possible to extend the upward P-cliticization analysis to the cases of P+*Combien* extraction in French discussed by Kayne (1984); Starke (2001); Abels (2003).

(i) De combien (est-ce que) tu as besoin de photos?
 of how-many is-it that you have need of photos
 ‘How many photos do you need?’

The proposed analysis of movement within and out of BCS PPs then rather straightforwardly extends to the Korean constructions discussed in this section.

Conclusion

The paper has demonstrated that accent shift from hosts to prepositions in a dialect of BCS depends on the morphological and syntactic complexity of the host as well as on syntactic mobility of the host. To this end, I have investigated how BCS clitics are mapped from syntax to prosody in different morphological and syntactic contexts, discussing environments in which it is possible or impossible for a clitic to take over the accent from the word following it in a dialect of BCS. I have shown that morphological complexity influences this accent shift in two ways: it either partially blocks the accent shift, preventing the clitic from interacting with the default rule of initial High tone insertion; or it completely blocks the shift, preventing the clitic from interacting both with the rule of initial High tone insertion and the rule of High tone spreading. Furthermore, the accent shift is also blocked if the clitic precedes a syntactically complex host in the output of the syntax. I have argued that the differences between these different contexts can be captured if clitics map to the prosodic structure differently in different morphological and syntactic contexts. In particular, a clitic preceding a morpho-syntactically simple host incorporates into the prosodic word of the host; a clitic preceding a morphologically complex host adjoins to the prosodic word of the host; and a clitic preceding a syntactically complex host is outside of the prosodic word of the host, attached to it as a sister creating a phonological phrase with it.

Prepositions can also take over the accent from adjectives in BCS in some environments. Regarding these contexts, I have shown that this shift is correlated with whether the adjective

following the preposition can be separated from the rest of the NP in which it originates in the syntax. This has consequences on how clitics are mapped from the syntax to the prosodic structure in different contexts with adjectival hosts. In particular, a clitic preceding an adjective that can be separated from the rest of the NP behaves as if it precedes a simple, non-branching element (it interacts with the accent of the adjective); while a clitic preceding an adjective that cannot be separated from the rest of the NP behaves as if it precedes a branching element in the output of the syntax (it does not interact with the accent of the adjective). I have also shown that this correlation between accent shift and adjective mobility gives us a way to tease apart different analyses of cliticization of the preposition to its host. In particular, I have argued that prepositions cliticize to their hosts in the syntax in an upward fashion, which I also extended to certain cases where non-constituents appear to undergo extraction in BCS. Furthermore, I have shown that such an analysis can be extended to a number of other cases and that it also has consequences for the theory of phases. In particular, this analysis can be applied in several cases where extraction out of a phase headed by a clitic/affix appears to take place in spite of this extraction being blocked by phase-based locality constraints, resolving a number of problematic cases for the phase-based system.

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