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From A to N and Back: Functional and Bare Projections in the Domain of N and A

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From A to N and Back: Functional and Bare Projections in the Domain of N and A

Aida Talić, PhD.

University of Connecticut, 2017

This dissertation investigates structural complexity of the adjectival and the nominal domain, arguing these domains are parallel in their complexity within a language, but their complexity can vary cross-linguistically. The point of departure is Bošković's (2008, 2012) two-way typology regarding the nominal domain, where languages with articles are argued to project a functional layer (DP) above NP, while languages without articles lack the DP layer and allow bare NPs. By investigating the extended domain of both N and A, I show that a subset of languages with articles, namely those with affixal articles, cross-cut this two-way typology and argue they belong to a separate type.

Chapter 2 examines the parallelism between the domain of N and A, starting with an investigation of adverb extraction from predicative traditional adjective phrases (TAPs) cross-linguistically, comparing it with a parallel type of extraction (left-branch extraction) in the nominal domain. I show the two phenomena receive a unified account under a contextual approach to phases, arguing that languages differ in whether they always require functional structure in the domain of both N and A, or whether they allow bare NPs and APs: Languages with non-affixal articles belong to the former group and languages without articles to the latter, but a number of phenomena indicate that affixal article languages allow bare NPs and APs, even though they often project functional structure above them.

Chapter 3 discusses constructions where complements of phasal heads appear to move, which has been argued to be impossible (Abels 2003). I argue that these cases actually involve movement *out of* the complement, the main argument coming from the syntax-prosody interface, namely, the way clitics map from the syntax to prosody.

Chapter 4 reveals an asymmetry between attributive and predicative TAPs, where the former quite generally contain functional structure above AP, even in languages that have bare predicative APs (unless the language has a special predicative adjectival form that can be exceptionally used attributively, as in Bosnian/Croatian/Serbian and Icelandic). Investigating two different forms of adjectives in BCS in more detail provides support for additional functional projection with adjectival forms that occur only attributively.

From A to N and Back: Functional and Bare Projections in the Domain of N and A

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B.A., University of Zenica, 2009

M.A., University of Connecticut, 2014

A Dissertation

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APPROVAL PAGE

Doctor of Philosophy Dissertation

From A to N and Back: Functional and Bare Projections in the Domain of N and A

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*“Two roads diverged in a wood, and I-
I took the one less traveled by,
And that has made all the difference.”
Robert Frost*

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It has definitely been a road that I had no map for when I turned onto it, but one that has had the most profound effect on me so far, helping me knock down (or climb over) many walls I had thought existed around me. As I stand here excited about what's ahead of me and sad that I am about to leave what I have come to think of as my second home, I feel humbled by how much generosity, dedication, resilience, patience, and understanding people I've met on the way have put into sharing their knowledge and skill with me, which has led to me now having the privilege of writing these lines. Whatever words I use here to acknowledge glimpses of their support cannot thank them enough for what they have done for me, and I can only hope that as a researcher and a teacher they have helped me become, I will do that with my actions instead.

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“There are no value judgments in linguistics” are the words Midhat Riđanović started his phonology and morphology class in my senior year with, and throughout the semester one of his main goals was to teach us that every language and every language variety is equally interesting from the point of view of linguistics; patterns we see in a non-standard variety reveal the workings of the human mind to the same extent as the ones found in a standard variety, the latter being superior in no way for this task and both being equally interesting for our scientific inquiry. Thank you for making me realize that linguistics is not only one of the most exciting fields because, as a linguist, you get to peak into some of the most hidden corners of the human, but also because it

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Contents

1	Introduction	1
1.1	Main questions and goals	1
1.2	Points of departure	5
1.2.1	Locality and movement	5
1.3	Overall structure of the dissertation	13
2	On the N/A domain complexity typology	17
2.1	Introduction	17
2.2	Adverb extraction from traditional adjective phrases	19
2.2.1	Structural parallelism in the extended domain of N and A	28
2.2.2	Two different motivations for functional structure	34
2.3	Article-drop in affixal article languages	37
2.3.1	Superlatives	42
2.3.2	Other phenomena	49
2.3.2.1	Majority ‘most’	49
2.3.2.2	Adjunct extraction	55
2.3.2.3	Exhaustivity presupposition	57
2.3.2.4	Weak definites	59
2.4	Anaphor licensing	62
2.4.1	Reflexive possessives (Reuland 2011; Despić 2011)	62
2.4.2	Possessives binding out of TNPs	69
2.5	Conclusion	71
2.6	Appendix	75
3	Complements of Ns and As, accented Ps, and extraordinary extractions out of PPs ...	77
3.1	Introduction	77
3.2	BCS accent assignment	85
3.3	Structure sensitive clitic mapping to prosody	88
3.3.1	Accent shift to clitics with syntactically simple and complex hosts	88
3.3.2	Accent shift with syntactically mobile and inert hosts	107
3.4	Implications of the analysis and phasal complement extraction	118
3.4.1	(Im)mobile phasal complements	120
3.4.1.1	Porous islands – Decapitated phases cannot be phases	126
3.4.2	Inherent-case marked complements of N and A	132
3.4.3	Apparent phasal complement movement in Korean	137
3.4.4	Extraordinary <i>combien</i> -extraction in French	140
3.5	Conclusion	142
4	Attributive TAPs	145
4.1	Introduction	145
4.2	Adverb extraction from attributive TAPs	146
4.2.1	Adnominal predicative adjectival form in BCS and Icelandic	154
4.2.2	A puzzle with Icelandic attributive TAPs – LBE vs. AdvE	158
4.3	BCS long and short adjectival forms vs. Cinque’s dual source of modification	164
4.3.1	The dual source modification hypothesis	165
4.3.2	Two adjectival forms in BCS	168
4.3.3	Long adjectives	169

4.3.4	Short adjectives	176
4.4	BCS long adjectives and specificity in the syntax, morphology, and prosody	185
4.4.1	Structure dependent tone in BCS adjectives	188
4.4.1.1	Short vs. long adjective distinction – the pattern	188
4.4.1.2	TAPs in the syntax and in PF	193
4.4.1.3	A case of contextual allomorphy	196
4.4.1.4	Nominal vs. pronominal declension endings	198
4.5	Conclusion	202
4.6	Appendix: Full paradigm for short vs. long adjectives	204
	References	205

Chapter 1 – Introduction

1.1 *Main questions and goals*

One of the central questions in syntactic theory is what the inventory of overt and covert elements that enter syntactic derivations as separate heads and project phrases is. While lexical categories and overt, morphologically free functional elements like the definite and the indefinite article in English are generally considered to project their own phrases in the syntax, it is less clear whether all (or any) morphologically bound overt functional elements like case suffixes or affixal articles in some languages project separate functional structure, as well as whether in languages that lack overt manifestation of a particular functional head which has overt manifestation in other languages, a null counterpart of that head is still present in their vocabulary inventory which projects the relevant functional phrase or if the relevant functional projection, and the vocabulary item, are missing altogether.

The inventory of elements projecting phrases in the extended domain¹ of N has proven to be a topic of wide interest, resulting in two major lines of research still active today, the crucial difference between them being in the categorial status of the topmost projection in the nominal domain in languages that do not have articles, where, for instance, the meaning of “*the book*” is expressed by using a bare noun as in the following example from Bosnian/Croatian/Serbian (BCS).

¹ Throughout the dissertation I use the terms “extended domain”/“extended projection” interchangeably to refer to parts of structure containing the projection of a particular lexical head and functional structure enclosing it (see Grimshaw 1991, 2000; Bošković 2014).

(1) [_{NP} knjiga]
‘the/a book’

(BCS)

Under the Universal DP Hypothesis (e.g. Longobardi 1994; Cinque 1994; Scott 2002; Progovac 1998; Leko 1999; Bašić 2004; among others), where the category of D is present in all languages, the topmost phrase in (1) is a DP projected by a phonologically null article; while under the NP/DP approach (Corver 1992; Zlatić 1997; Trenkić 2004; Bošković 2005, 2009, 2012; Marelj 2008, 2011; Despić 2011, 2013; M. Takahashi 2012; Runić 2014; among others), where languages without articles are argued not to have the category D, the topmost projection in examples like (1) is an NP.²

This dissertation will not explicitly attempt to tease apart these two different lines of approaches, since there is abundance of relevant arguments in the previous literature on that (see the references cited above). However, the overall system argued for in the thesis will provide evidence against the Universal DP Hypothesis in the context of a broader discussion which goes beyond the nominal domain itself. The discussion will take Bošković’s (2008a, 2012 *et seq*) NP/DP typology as the point of departure. Bošković has argued that languages split into NP- and DP-languages, where languages that lack a vocabulary item for a definite article belong to the former group, and those that have a definite article belong to the latter group. However, I will argue that this typology, which makes a two-way split between languages, does not capture the behavior of a significant subset of languages with articles, which will lead me to propose a new

² All the cited works discuss BCS in this context, with Bošković (2012) making the more general claim. For claims that particular languages without articles do not have DP, see also Fukui 1988; Chierchia 1998; Cheng and Sybesma 1999; Lyons 1999; Willim 2000; Baker 2003; Kang 2014; Zanon 2015; Bošković and Hsieh 2013; among others)

three-way typology regarding the amount of structure in the extended domain of N, which will be argued to hold for both the N- and the A-domain due to a structural parallelism between the two. What matters for this investigation is that languages like Bulgarian, which have affixal articles, are considered to be typologically grouped with English under the NP/DP parameter. However, I will discuss a number of phenomena in the adjectival domain and the nominal domain where languages like Bulgarian sometimes do indeed pattern with English, but crucially sometimes they also pattern with languages without articles like BCS. Based on this behavior of Bulgarian and other languages with affixal articles (I investigate Romanian, Icelandic, Danish, Norwegian, Swedish, Arabic, and Hebrew), I suggest that such languages belong to a third language type distinct from both English and BCS. I will argue that these languages do not require functional structure in the domain of N and A for deep formal reasons as languages like English do, but they can project functional structure in the presence of additional morphological and/or semantic motivation for it.

To argue for the new typology, I first explore the structure of traditional adjective phrases (TAPs), focusing on phenomena that are similar to the ones we find with traditional noun phrases (TNPs)³, since that will enable us to draw certain parallels between the two domains. In this respect, one of the major claims I will argue for is that the amount of structure projected in the extended domains of N and A is parallel within a language, while it can vary cross-linguistically. Thus, languages that require functional structure in the domain of N also require functional structure in the domain of A, but functional structure in these two domains is not required universally. Crucially, even in languages that allow bare lexical projections, more structure can be

³ I will be using the notions “traditional adjective phrase (TAP)” and “traditional noun phrase (TNP)” throughout the dissertation when there is no need to commit to the precise categorial status of the highest maximal projection in the extended domain of A and N (TAP and TNP thus stand for AP and NP and their extended domains, if any).

present in the domain of N and A, in the presence of additional functional heads. This has been argued for the nominal domain in languages without articles in the context with numerals and certain quantifiers, which are argued to project a QP above NP (see e.g. Despić 2011; M. Takahashi 2011; Bošković 2012, 2013a; Bošković and Şener 2014; among others). I will argue that a similar situation is found in the adjectival domain. For example, BCS has two morphological forms of adjectives, usually referred to as the “short” form (SF) and the “long” form (LF), which differ in the prosody of the adjectival stem and in some cases in the agreement endings they take. I will argue that, although BCS allows bare AP projections with short adjectives, BCS long-form adjectives project additional functional structure, parallel to the presence of functional structure in contexts with numerals and quantifiers in the nominal domain. This means that the TNP in (2a) is a bare NP, while in (2b), there is a functional projection above the NP, indicated by the presence of the numeral *pet* ‘five’.⁴

- (2) a. knjige (BCS)
books
b. **pet** knjiga
five book

Similarly, the TAP with a short-form adjective in (3a) is a bare AP, while the TAP with a long-form adjective in (3b) has a functional projection above it, indicated by the presence of the suffix *–i*.⁵

- (3) a. plav (BCS)
blue.SF

⁴ The numeral is actually assumed to be located in SpecQP, since it can undergo LBE (see Bošković 2013a).

⁵ The adjectives in (3) are in nominative. The noun is in nominative in (2a), but receives genitive when it occurs with the numeral in (2b).

- b. plavi
blue.LF

However, I will argue that in article languages like English, there must always be a functional projection within the TNP as well as within the TAP. Furthermore, I will argue that a subset of languages with articles, namely those that have an affixal article, exhibit distinct behavior in the relevant respect, which distinguishes them from both languages like BCS and languages like English.

1.2 *Points of departure*

1.2.1 *Locality and movement*

Discussing the amount of structure projected in extended domains of different lexical categories goes naturally with discussing issues of the locality of movement within those domains. Locality of movement will in fact be used as one of the crucial diagnostics for determining the amount of structure within extended domains of different lexical categories in this dissertation. Following standard proposals about structure building, I assume that this is a stepwise process and that subparts of structure assembled by the syntax undergo Spell-Out and are sent to the PF and the LF interface at relevant points in the derivation. In the current theory, phases are taken to determine locality domains for syntactic operations as well as what part of the structure is sent to Spell-Out. Regarding syntactic movement, there are two crucial locality constraints for the purposes of this dissertation. Chomsky (2000) proposes the *Phase Impenetrability Condition* (PIC):

- (4) 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 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. What the PIC ensures is that 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 2003; Ticio 2005; among others); 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.

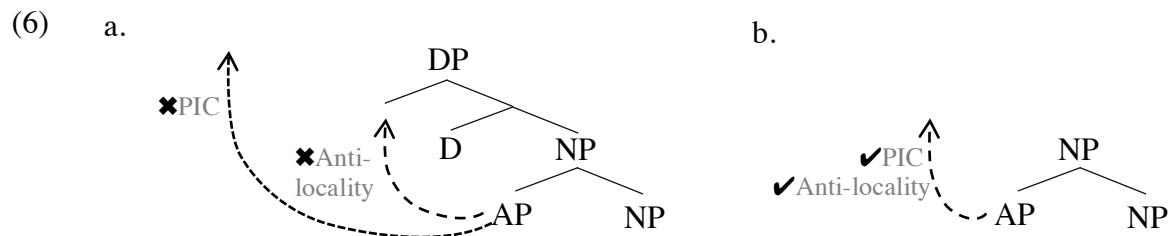
What is of particular interest for our purposes here is that the interaction of the two constraints can render extraction of certain elements out of a phase impossible. One such context is discussed by Abels (2003), who establishes a generalization that complements of phasal heads cannot move. This is illustrated in (5) by the impossibility of IP extraction out of a CP phase. 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. Thus, in (5), IP must move to SpecCP due to the PIC, which violates anti-locality.

- (5) a. $*[_{CP} \text{ IP}_i \text{ } [_C \text{ C } t_i]]$
 b. $*[_{IP} \text{ Anything will happen}]_i$, nobody believes $[_{CP} t_i [_C \text{ that } t_i]]$.

With respect to what counts as a phase, there are two lines of research in the literature. Chomsky (2000) assumes that the phasal status of a phrase is rigid in a sense that it is not affected by the syntactic context in which it occurs. Thus, vP and CP are always phases, regardless of the syntactic context that they occur in. On the other hand, a number of researchers have argued that the phasehood of a phrase can depend on its syntactic context (e.g. Bobaljik and Wurmbrand 2005; Bošković 2005, 2013a; Gallego and Uriagereka 2007; Despić 2011; den Dikken 2007; M. Takahashi 2011, among others). In this regard, Bošković (2013a, 2014) argues that all lexical categories (N, V, A, P) project phases, and that the highest phrase in the extended domain of every lexical category is a phase. Importantly, 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 the PIC and anti-locality, 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 its effect on extraction with respect to a contrast between languages like English and languages like BCS. As discussed above, an important property of BCS and more generally languages without articles, which distinguishes them from languages like English, is that they lack the DP layer (see Corver 1992; Zlatić 1997; Trenkić 2004; Bošković 2005, 2012; Marelj 2008, 2011; Despić 2011, 2013; M. Takahashi 2012; Runić 2014; among others, for BCS). As a result, the nominal domain in these two types of languages is of different size. Bošković (2013a) 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. Bošković notes that this phasal approach has a major consequence on two phenomena which are relevant for our purposes. First, extraction of elements adjoined to NP (like modifying APs) should be blocked in languages like English since they would need to move via SpecDP to due to the PIC, which would violate anti-locality (6a); however, such extraction should be allowed in languages like BCS, the relevant elements being at the edge of a phase given that the DP layer is missing (6b).



It is well-known from earlier literature that this is in fact what we find. 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, as in (7a) (Uriagereka 1988; Corver 1992; Bošković 2005, 2013a).⁶ 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).⁷ In contrast to BCS, in languages like English, LBE is not possible (7b).

⁶Bošković (2012) gives the following languages as allowing LBE, all of which lack articles: Russian, Polish, Czech, Ukrainian, Slovenian, BCS, Mohawk, Southern Tiwa, Gunwinjguan languages, Hindi, Bangla, Angika, and Magahi. Bošković also observes that the development of articles has led to the loss of LBE in Ancient Greek and that Colloquial Finnish, which is developing an article, has lost LBE (in contrast to the Literary Finnish, which lacks articles and allows LBE, see also Franks 2007).

⁷ Alternative analyses treat this phenomenon as involving remnant movement of the NP which contains only the AP (Franks and Progovac 1994; Abels 2003) or as involving full NP movement with scattered

- (7) a. Staru_i je voljela t_i kuću. (BCS)
 old is loved house
 ‘She loved the old house.’

deletion, the NP being deleted in the highest copy and the AP in the lower copy (Fanselow and Ćavar 2002). A number of authors have, however, given arguments against these analyses (see Bošković 2005, Stjepanović 2010, 2012; Despić 2015a). Some of the arguments for the LBE analysis come from contexts where moving the adjective alone and moving the whole NP containing the adjective yield different interpretations. Thus, Despić (2015a) discusses the paradigm in (i). *Jedan* can only have wide scope in (ia). In (ib), *jedan* can have narrow scope. Importantly, in (ic), *jedan* can only have wide scope, just like in (ia), where the whole NP is in situ. If in (ic), the whole NP remnant containing the adjective and a trace of N moved to the beginning of the sentence, we would expect (ic) to pattern with (ib), where it is clear that the whole NP is fronted, regarding scope interpretation (the same holds for the scattered deletion analysis), which is not what we find.

- (i) a. Jedan naš učenik je vidio svaku utakmicu na svjetskom prvenstvu. (BCS)
 one our student is seen every game on world cup
 ‘One of our students saw every game on the World Cup.’
 b. 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.’
 c. Svaku_i je jedan naš učenik vidio t_i 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.’

Consider also the multiple wh-questions in (ii), discussed by Stjepanović (2010). When the subject precedes the object, both pair-list (a list of people and what grade each of them got) and single-pair (a single person and what grade he/she got) readings are possible (iia); but when the object NP precedes the subject, only the single-pair reading is possible (iib). Interestingly, when only the adjective moves from the object (undergoing LBE in front of the subject), both pair-list and single-pair readings are possible (iic), just like the case where the whole object NP follows the subject NP (iia). This can be captured if the whole object NP moves over the subject in (iib) but not in (iic), contrary to what happens under the remnant movement and the scattered deletion analyses.

- (ii) a. **Ko** je **kakvu ocjenu** dobio? ✓Pair-list ✓Single-pair (BCS)
 who is which grade gotten
 b. **Kakvu ocjenu** je **ko** dobio? ✗Pair-list ✓Single-pair
 what grade is who gotten
 c. **Kakvu** je **ko** **ocjenu** dobio? ✓Pair-list ✓Single-pair
 what is who grade gotten
 ‘Who got what grade?’

To note just one more argument. Stjepanović (2012) observes the contrast in (iii), where LBE of the *ni* negative concord adjective out of the subject NP is blocked (iiia), but moving the whole subject NP is allowed (iiib). Stjepanović shows that it is impossible to capture this contrast under the alternative non-LBE analyses, both of which involve movement of the whole NP even in (iiia).

- (iii) a. *Nijedan_j nikog_i [t_j momak] ne vidi t_i. (BCS)
 no.NOM nobody.ACC guy not sees
 ‘No guy sees anybody.’
 b. [Nijedan momak]_j [nikog]_i t_j ne vidi t_i.
 no.NOM guy nobody.ACC not sees
 ‘No guy sees anybody.’

- b. *Old_i she loved t_i house.

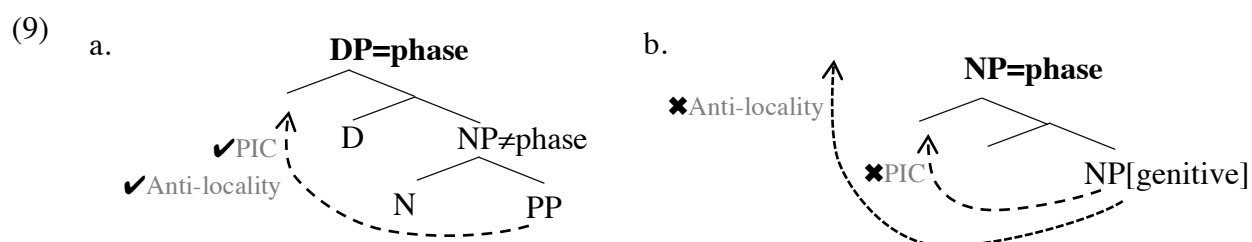
Assuming that attributive APs are adjoined to NP, (7a-b) are instantiations of (6a-b). (7b) is then blocked by the interaction of the PIC and anti-locality (see (6a)); the problem in question does not arise in (7a) (see (6b)). I will discuss a parallel operation in the adjectival domain, exploring whether intensifying adverbs can separate from adjectives they modify, and I will show that this operation makes a different split from the one made by LBE. Thus, as shown in (8a-b), intensifying adverb extraction is allowed in BCS, a language without articles which also allows LBE, and disallowed in English, a language with articles which also disallows LBE. However, as shown in (8c), it is allowed in Bulgarian, a language with articles which disallows LBE.

- (8) a. Strašno_i je bila t_i umorna. (BCS)
 terribly is been tired
 ‘She was terribly tired.’
 b. *Terribly_i, she was t_i tired. (English)
 c. Užasno_i bjah t_i umoren. (Bulgarian)
 terribly, was tired
 ‘I was terribly tired.’

Nevertheless, I will argue that LBE and intensifying adverb extraction can still be accounted for in terms of the same syntactic mechanisms, both (7b) and (8b) being ruled out through the interaction of the PIC and anti-locality. I will further argue that what is responsible for the split behavior of Bulgarian, which disallows LBE but allows intensifying adverb extraction, is the fact that Bulgarian has affixal articles. This will lead me to argue for a new typology, where languages with affixal articles represent a language type distinct from both languages with articles and languages without articles, a claim which will be confirmed through an investigation of a number

of additional phenomena (e.g. superlatives, the interpretation of ‘most’, adjunct extraction, anaphor licensing, and weak definites).

Returning to the contextual approach to phasehood adopted here, another major consequence of this approach is that a complement of a noun is allowed to extract in languages with articles since the PIC and anti-locality do not prevent such complements from moving 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.



Bošković (2013a) argues that this prediction is borne out, discussing, among other languages, English, which allows extraction of PP complements of N, and BCS, which disallows genitive-marked complement extraction.

- (10) a. [Of which city]_i did you witness the destruction t_i ? (Chomsky 1986: 80)
 b. [To which problem]_i did you discover solutions t_i ?
 c. ?*[Ovog studenta]_i sam pronašla knjigu t_i. (Bošković 2013a: 90)
 this.GEN student GEN am found book

However, I will discuss instances of what I will refer to as “extraordinary complement extraction” in the domain of N and A, where complements of phasal heads do appear to move. One such case concerns BCS (11), where the PP complement of N moves. I will argue that, in spite of

appearances, (11) actually does not involve N-complement movement and provide an account of such constructions which is fully consistent with the PIC and anti-locality.

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

The main argument for my conclusion comes from the syntax-prosody interface, where I establish a new generalization regarding syntactic mobility and a particular prosodic phenomenon, namely accent shift. The discussion in question will also lead me to draw a number of conclusions regarding the nature of the syntax-prosody interface. For example, examining contexts with proclitics that precede hosts of different morphological and syntactic complexity, I will investigate how clitics map from the syntax to prosody.

Important for the discussion of the syntax-prosody interface in this respect will be constructions like (12), where two elements that do not appear to form a syntactic constituent, the preposition and the adjective, undergo extraction. I will argue that what is crucial in such cases is that the preposition is a proclitic.

- (12) U staroj su živjeli kući.
 in old are lived house.
 ‘They lived in old house.’

Returning to extractions of nominal complements in BCS, while BCS disallows extraction of genitive-marked NP complements of N (10c), NP complements of both N and A with case

marking other than genitive can extract (see Zlatić 1994 and Bošković 2013a), as illustrated in (13) with instrumental and dative complements.

- (13) a. [Kakvom kaznom]_i je mrzio [_{NP} prijetnje t_i]?
 what.kind.INST punishment.INST is hated threats
 ‘The threat of what scared him?’
- b. [Kojim studentima]_i je on [_{AP} zahvalan t_i] ?
 which.DAT students.DAT is he grateful
 ‘Which students is he grateful to?’

These contexts will lead me to discuss the structure and licensing of inherent-case marked complements of N and A in BCS. I will argue that the complement extraction in (13) is parallel to the cases in (11), the only difference being that (13) contains a null P. Therefore, we will end up with a unified account of (11), (12), and (13), where the preposition plays an important role and which I will argue can also be extended to certain constructions in Korean and French.

While the dissertation focuses on the structure of the NP and the AP domain cross-linguistically, proposing a new typology in this respect, the discussion in the dissertation has consequences for a number of other phenomena and theoretical issues, including structural parallelism across domains, locality of movement, spell-out domains, interpretation of various nominals, the role and licensing of agreement, the nature of inherent case, the nature of the syntax-prosody interface, etc.

1.3 *Overall structure of the dissertation*

This dissertation is organized as follows.

In Chapter 2, I address the question of whether functional structure is present or absent in the extended domain of N and A cross-linguistically, and I argue for a new typology regarding the N/A domain complexity. I start with a cross-linguistics investigation of a phenomenon that has not received much attention in the literature on the adjectival domain, namely adverb extraction out of predicative TAPs, and show that there is a split between languages in whether they allow it or not (I discuss attributive TAPs in Chapter 4). I propose a new generalization to capture this variation and provide an account of the generalization. The account I give for the cross-linguistic variation in question is based on the contextual approach to phases outlined above, which also unifies adverb extraction with a phase-based account of LBE proposed by Bošković (2012). I argue that in languages where adverb extraction is blocked, there is a functional projection above AP, which makes it impossible for the adverb to move due to the interaction of the PIC and anti-locality. In contrast, in languages where adverb extraction is possible, there is no such functional layer above AP. I also argue for a structural parallelism between the N- and A-domains, where languages that require functional structure to be projected in their nominal domain also require functional structure in their adjectival domain, while languages that allow bare NPs also allow bare APs.

In Chapter 3, I turn to a type of extraction from the domain of N and A, namely N/A-complement extraction in BCS, which appears to be problematic for the proposals adopted and argued for in Chapter 2. Namely, BCS is one of the languages that I argue allow bare NPs and APs, which under the contextual approach to phases adopted here means that NP and AP are phases when there is no functional structure projected above them, as the highest projections in their extended domain. Since, given the locality constraints on extraction, any element moving out of NP or AP in BCS must move through the edge of NP or AP, extraction of complements of Ns and As in BCS is then

predicted not to be possible (see Abels's (2003) generalization that complements of phasal heads cannot move). As noted above, the impossibility of extraction of genitive-marked nominal complements in BCS supports this prediction. However, in addition to such cases where complement extraction is blocked, BCS also has complements of N and A that appear to be able to extract. To understand what differentiates these cases from immobile genitive-marked complements, I discuss the nature of their head element, namely the preposition, in more detail. This leads me to propose an account of these extraordinary complement extractions which will unify it with another type of extraordinary extraction that resembles LBE of adjectives, but appears to extract a non-constituent (P+AP) out of PPs that contain an NP modified by an AP (cf. (12)). One of the properties of BCS prepositions relevant for our investigation of these extraordinary extractions is that they can take over the accent from the word immediately following them in certain contexts. Crucially, this accent shift will serve as a diagnostic for what kind of a host a preposition is attached to at the output of the syntax, which will shed light on the mechanism responsible for allowing extraordinary extractions that separate P+AP from [P+AP NP], creating an illusion that a non-constituent moves, as well as the cases that give an impression that a complement of a phase head moves. I will also discuss cases in Korean and French where the same mechanism is suggested to be responsible for certain unusual and otherwise problematic extractions.

In Chapter 4, I return to discussing adverb extraction out of TAPs, focusing on attributive TAPs cross-linguistically. Interestingly, although there is a split between languages into two groups when it comes to such extraction out of predicative TAPs, as I show in Chapter 2, there is much less variability among languages in this respect with attributive TAPs. All but two languages under

investigation disallow adverb extraction out of attributive TAPs. Even the two languages that allow it, BCS and Icelandic, allow it only in one well-defined context, with such extraction otherwise being blocked. Thus, these facts indicate that in languages that allow adverb extraction out of predicative TAPs (which I argue have bare APs in this position), there is a crucial difference between TAPs in the predicative and in the attributive position. I argue in this chapter that all languages under consideration project a functional layer above AP in the attributive position, where APs enter into a modification relation (I also provide an account of the exceptional cases in BCS and Icelandic). The chapter also discusses peculiar behavior of certain TAPs in Icelandic, which cannot undergo LBE, but allow adverbs to move out of them, and gives an analysis in terms of agreement in the nominal domain. Finally, I discuss independent motivation for the presence of functional structure in the context of attributive adjectives by investigating morphological and prosodic properties of BCS adjectives in more detail.

Chapter 2 - On the N/A Domain Complexity Typology*

2.1. Introduction

This chapter addresses the presence/absence of functional structure in the extended domain of N and A cross-linguistically. As noted in Chapter 1, regarding the nominal domain, Fukui (1988), Zlatić (1994), Chierchia (1998), Baker (2003), Bošković (2005, 2008a, *et seq*), among others, have independently argued that languages may differ with respect to whether or not they have DP. Bošković (2008a, 2012) establishes a large number of cross-linguistic generalizations that separate languages that have articles from those that lack articles. He argues that differences between languages concerning a number of syntactic and semantic phenomena, such as extraction, superiority effects, the majority reading of ‘most’, radical pro-drop, to name a few, where languages behave differently depending on whether or not they have articles, can be captured if languages differ in whether or not they have DP (which will be referred to as *the NP/DP Parameter* for ease of exposition). Under the NP/DP Parameter, languages that have an article in their vocabulary inventory that turns predicates into individuals (the meaning of ‘the’ in English (see e.g. Chierchia 1998)) have a DP in their nominal domain, but languages without such an item lack the DP layer. Thus, in Bošković’s typological split, all languages with a definite article like English

* Some of the material from Chapter 2 and Chapter 4 was presented at *Penn Linguistics Conference* (PLC) 38, *Formal Approaches to Slavic Linguistics* (FASL) 24, *Morphosyntactic Triggers of Tone: New Data and Theories* (Leipzig), *Formal Description of Slavic Languages* (FDSL) 11, FASL 26, and the Department of Linguistics at Carleton College; articles based on some of this material appeared in the *Canadian Journal of Linguistics* and *Linguistic Inquiry*.

or Bulgarian belong together and are separated from languages without articles like Bosnian/Croatian/Serbian (BCS):

- (1) a. $[_{DP} \quad [_{NP} \dots]]$ \Rightarrow languages with articles (e.g. English, Bulgarian)
 b. $[_{NP} \dots]$ \Rightarrow languages without articles (e.g. BCS)

Extending the discussion to the domain of A, as well as investigating further several phenomena in the domain of N, the goal of this chapter is to argue that the NP/DP typology, which makes a two-way split between languages, is empirically inadequate and propose a separate third type of languages that do not pattern fully either with DP-languages like English, or with NP-languages like BCS. I will argue that the three-way typological split results from an interaction of two fundamental properties that differ cross-linguistically – the amount of structure projected in the extended domain of N and A and whether a particular language has a vocabulary item for a definite article or not. Furthermore, I will argue that what is also relevant is the nature of the definite article – in particular, whether it is an affix or a free function word.¹ We will see that languages with affixal articles like Bulgarian, which pattern with other languages with articles in some respects, also often behave like languages that lack a DP (e.g. with respect to extraction of intensifying adverbs and the possibility of article drop in certain contexts). This behavior of languages with affixal articles will motivate a new three-way typological split regarding the nominal domain where languages with affixal articles represent a separate type.

¹ There are languages like Galician where articles attach to an element outside of the nominal domain (verb in the case of Galician, see Uriagereka 1988, 1996; Bošković 2013b). I will not be concerned with such languages here, my focus being on languages where articles get affixed within the nominal domain.

The chapter is organized as follows. In Section 2.2 I discuss adverb extraction from predicative TAPs, establishing a new generalization regarding this process based on a number of languages. Comparing the structural complexity of TAPs and TNPs within the same language and cross-linguistically, I give an account of adverb extraction that unifies it with left-branch extraction (LBE) in the nominal domain in Section 2.2.1. In Section 2.3 I discuss several additional contexts where affixal article languages behave as a separate subgroup.

2.2. Adverb extraction from traditional adjective phrases

I will start by exploring a TAP-internal operation that is similar to left branch extraction (LBE) in the TNP in that it targets the left edge of the TAP, namely, extraction of intensifying adverbs. In this chapter, I focus on such extraction from TAPs in the predicative position; in Chapter 4 I will discuss adverb extraction from TAPs in the attributive position. Extraction of leftmost elements in the nominal domain has been discussed ever since Ross (1967/1986: 127) proposed the Left Branch Condition, which blocks movement of determiners, possessors, and adjectives out of TNPs. However, it has been noticed (already by Ross (1986) for Russian) that this condition does not hold in all languages; in particular, as noted in Chapter 1, it has been established that languages may allow left branch extraction of adjectives only if they lack articles (Uriagereka 1988; Corver 1992; Bošković 2012). Thus, Bošković observes that LBE is allowed in BCS, Russian, Polish, Czech, Ukrainian, Slovenian, Mohawk, Southern Tiwa, Gunwinjguan languages, Hindi, Bangla,

Angika, and Magahi, all of which lack the definite article.² This is a one-way correlation because languages that lack the definite article may, but do not have to, allow LBE. For instance, Chinese disallows LBE and lacks articles.³ Furthermore, Bošković also observes that developing articles in ancient Greek led to the loss of LBE, and that the same process is happening in Finnish, where the development of an article in colloquial Finnish has led to the loss of LBE in this register.

In contrast to LBE in TNPs, extraction of intensifying adverbs out of predicative TAPs, or out of TAPs in general, has received very little attention in the literature. In this chapter I examine such extraction, focusing on a number of languages from Slavic, Germanic, Romance, and Semitic families, as well as Hungarian, Cypriot Greek, and Persian.

A survey testing adverb extraction in a number of these languages reveals an interesting language split. While there is a lot of overlap between languages where LBE is possible and languages where adverb extraction out of predicative TAPs is possible, these two operations are not always correlated. Crucially, languages split into three groups with respect to whether they allow/disallow these operations. First, a number of languages like English, which have a definite article and disallow LBE, also disallow adverb extraction out of predicative TAPs, as illustrated in (2).

- (2) a. *Terribly_i I am [t_i tired]. (English)
 b. *Ontzettend_i ben ik [t_i moe]. (Dutch)
 terribly am I tired
 cf. Ik ben ontzettend moe.
 ‘I am terribly tired.’

² Recall that what matters for Bošković’s generalizations is the presence of *definite* articles in a language (Bošković gives a number of additional generalizations that separate languages with articles from languages without articles).

³ See Bošković (2012) for additional requirements for LBE (agreement is also relevant here). Note also that, following Bošković, I use the term LBE to refer only to AP extraction.

- c. *Schrecklich_i bin ich [t_i müde]. (German)
 terribly am I tired.
 cf. Ich bin schrecklich müde.
 ‘I am terribly tired.’
- d. *Terrivelmente_i eu estou [t_i cansado]. (Brazilian Portuguese)
 terribly I am tired
 cf. Eu estou terrivelmente cansado.
 ‘I am terribly tired.’
- e. *Extrêmement_i, il est [t_i intelligent]. (French)
 extremely he is smart
 cf. Il est extrêmement intelligent.
 ‘He is extremely intelligent.’
- f. *Estremamente_i è [t_i intelligente]. (Italian)
 extremely is smart
 cf. È estremamente intelligente.
 ‘He is extremely smart.’
- g. *Extremadamente_i (yo) estoy [t_i cansado] . (Spanish)
 extremely I am tired
 cf. (Yo) estoy extremadamente cansado.
 ‘I am extremely tired.’
- h. *Nagyon_i ő [t_i intelligens]. (Hungarian)
 very he smart
 cf. Ő nagyon intelligens.
 ‘He is very intelligent.’
- i. *Apistefta_i, en [t_i eksipn-os]. (Cypriot Greek)
 unbelievably, he smart-M
 cf. En apistefta eksipnos.
 ‘He is unbelievably smart.’

In contrast, languages like BCS, which lack a definite article and allow LBE, also allow adverb extraction out of predicative TAPs, as illustrated in (3).⁴

⁴ I am focusing here on intensifying adverbs, which I assume are adjoined to AP (see the discussion below), putting aside degree adverbs (e.g. too, so), which are standardly considered to be heads taking AP as their complement in English (Abney 1987; Corver 1990; Grimshaw 1991; Kennedy 1999; Kennedy and Merchant 2000). This, however, does not seem to hold for all languages, i.e. degree adverbs may be phrasal elements in some languages, like BCS, because they undergo phrasal movement just like intensifying adverbs do.

- (3) a. Strašno_i je bila [t_i umorna]. (BCS)
 terribly is been tired.F.SF
 cf. Bila je strašno umorna.
 ‘She was terribly tired.’
- b. Okropnie_i on był [t_i zmęczony]. (Polish)
 terribly he was tired
 cf. On był okropnie zmęczony.
 ‘He was terribly tired.’
- c. Užasno_i ja byl [t_i rad tebj_a videt’]. (Russian)
 terribly I was glad.SF you see
 cf. Byl užasno rad tebj_a videt’.
 ‘I was very glad to see you.’
- d. Strašansko_i je bila [t_i utrujena]. (Slovenian)
 terribly is been.F tired
 cf. Bila je strašansko utrujena.
 ‘She was terribly tired.’
- e. binəhayæt_i ʔun [t_i bahuš-e] (Persian)
 extremely he smart-be.3SG
 cf. ʔun binəhayæt bahuš-e
 he extremely smart-be.3SG
 ‘He is extremely smart’

Crucially, languages like Bulgarian, Icelandic, and Romanian have a definite article and behave like other languages with articles in disallowing LBE, as shown in (4). Icelandic has two forms of adjectives, one for indefinite and one for definite contexts; neither of the forms can undergo LBE (4b-c).

- (4) a. *Kakva_i prodade Petko [t_i kola]. (Bulgarian; Bošković 2001: 198)
 what-kind-of sold Petko car
 cf. [Kakva kola]_i prodade Petko t_i ?
 ‘What kind of car did Petko sell?’

(i) Kako_i je to važna [t_i odluka]!
 How is that important decision
 ‘How important that decision is!’

- b. *Fallet_i keypti hann [t_i hús]. (Icelandic; G. R. Hardarson, p.c.)
 beautiful bought he house.INDEF
 cf. Hann keypti fallet hús.
 ‘He bought a beautiful house.’
- c. *Fallega_i keypti hann [t_i hús-ið].
 beautiful.DEF bought he house-the
 cf. Hann keypti fallega húsið.
 ‘He bought the beautiful house.’
- d. *Scumpe_i am văzut [t_i automobile]. (Romanian; Petroj 2014)
 expensive have seen cars
 cf. Am văzut scumpe automobile.
 ‘I saw expensive cars.’
- e. *Scumpe-le_i am văzut [t_i automobile].
 expensive-the have seen cars
 cf. Am văzut scumpele automobile.
 ‘I saw the expensive cars.’

However, these three languages allow adverb extraction out of predicative TAPs, as in (5).

- (5) a. Užasno_i bjah [t_i umoren]. (Bulgarian)
 terribly was tired
 cf. Bjah užasno umoren.
 ‘I was terribly tired.’
- b. Rosalega_i er hún [t_i falleg]. (Icelandic)
 extremely is she beautiful.SG.F
 cf. Hún er rosalega falleg.
 ‘She is extremely beautiful.’
- c. Foarte_i sunt [t_i obosită]. (Romanian)
 very am tired
 cf. Sunt foarte obosită.
 ‘I am very tired.’

Therefore, adverb extraction makes a different kind of cut between languages than having articles and LBE do. Bulgarian, Icelandic, and Romanian pattern with languages like English regarding LBE, but with languages like BCS regarding adverb extraction. Given the behavior of these three

languages, where they in some respects behave like English-like languages, which have articles, and in other respects like languages without articles, we can conclude that adverb extraction does not simply make a distinction between languages with and without articles. Rather, there is a three-way split with BCS-like languages without articles (which allow both LBE and adverb extraction) being in one group, English-like languages with articles (which disallow both LBE and adverb extraction) being in the second group, and Bulgarian-like languages (which allow adverb extraction but disallow LBE), which have articles, being in a separate third group (6).

(6)

<i>Art</i>	<i>LBE</i>	<i>AdvE</i>	<i>Example Language</i>
no	yes	yes	BCS
yes	no	no	English
yes	no	yes	Bulgarian

Furthermore, even though the majority of languages investigated here that allow adverb extraction are Slavic languages, there are also non-Slavic languages that allow it (Persian, Icelandic, and Romanian). Thus, it is clear that it is not only some property of Slavic languages that allows for it. One crucial property that separates Bulgarian, Icelandic, and Romanian from languages like English is that articles in these three languages are affixes⁵, more precisely suffixes. With all of the above in mind, we reach the new generalization in (7):

⁵ The definite article in these three languages also exhibits some behavior of clitics, so it could be the case that these items are enclitics. I simply use the term affix as a more general term. I will discuss the affix nature of these items in more detail below (I will also discuss additional affixal article languages below).

(7) *Adverb Extraction Generalization (Predicative TAPs)*:⁶

Languages with non-affixal articles disallow Adv-extraction out of predicative TAPs, but languages without articles and languages with affixal articles may allow it.

Thus, Bošković's NP/DP parameter does not capture the three-way split we get when we consider the whole pattern of phenomena pertaining to edge extraction in both the nominal and the adjectival domain. Affixal article languages like Bulgarian cross-cut Bošković's typology in that they in some respects behave like NP languages and in others like DP languages, despite having articles. Although at this point having the mixed type of languages may seem problematic for current accounts of the phenomena discussed from the NP/DP perspective, I will give an account below which argues that this type of languages is predicted to exist within this perspective if we take into consideration a more general parameter regarding the presence of functional structure across categories as well as morphological and semantic properties of articles in Bulgarian-type languages with affixal articles. This will eventually lead us to a new typology that differentiates languages with affixal articles from both languages with articles and languages without articles.

Putting this broader issue aside for the time being and focusing on the adverb extraction generalization in (7), at this point it is necessary to point out how the adverb extraction generalization should be interpreted and what predictions the generalization makes. Importantly, as Bošković (2005: 3) points out regarding the LBE generalization, which states that only

⁶ This is not the only phenomenon where languages with affixal articles behave like languages without articles. Thus, Reuland (2007, 2011) and Despić (2011) investigate availability of reflexive possessives cross-linguistically and reach a generalization that makes the same cut between languages. I give Despić's (2011:123) formulation of this generalization in (i) (postnominal marking refers to suffixal articles):

(i) If a language has reflexive possessives it either does not mark definiteness at all, or it marks definiteness postnominally.

I will discuss the generalization in (i) in Section 2.4.1. Note also that I address here only affixal article languages where the article is an affix on an element within the TNP. There are also affixal article languages where the article incorporates into an element outside of the nominal domain like Galician (see fn. 1).

languages that lack articles may allow LBE, lacking articles is a necessary, but not a sufficient, prerequisite for LBE. In other words, the LBE generalization is a one-way correlation. While having a definite article in a language necessarily means that the language does not have LBE, languages that lack articles may or may not have LBE. The latter is the case, for example, in Mandarin Chinese, as in (8).

- (8) *Gui_i de ta kandao-le [t_i che]. (Mandarin)
expensive LNK he buy-ASP car
'He bought expensive cars.'
(Shen 2014: 29)

Parallel to this, the adverb extraction generalization in (7) is also a one-way correlation. That is, (7) states that languages with non-affixal articles will not allow adverb extraction, while languages without articles and with affixal articles may or may not allow such extraction. In contrast to languages illustrated in (3) and (5), where adverb extraction is possible out of predicative TAPs, in Mandarin Chinese (9), which lacks articles, as well as in affixal article languages illustrated in (10), this extraction is not possible.⁷

- (9) *Tebie_i ta [t_i lei/congming]. (Mandarin Chinese)
 very he tired/smart
 cf. Ta tebie lei/congming.
 ‘He is very tired/smart’
- (10) a. *Ekstremt_i er han [t_i klog]. (Danish)
 extremely is he smart
 cf. Han er ekstremt klog.
 ‘He is extremely smart.’

⁷ (10) includes both languages with suffixal and prefixal articles (Arabic and Hebrew have the latter).

- b. *Ekstremt/veldig_i er hun [t_i smart]. (Norwegian)
 extremely is he smart
 cf. Han er veldig/ekstremt smart.
 ‘He is extremely smart.’
- c. *Extremt_i är han [t_i smart]. (Swedish)
 extremely is he smart
 cf. Han är extremt smart.
 ‘He is extremely smart.’
- d. %* jidd-an_i Aḥmad [THaki-un t_i]. (Standard Arabic)
 very-acc Ahmad smart-nom
 ‘Ahmad is very smart.’⁸
- e. *jidd-an_i Aḥmad [THaki t_i]. (Yemeni Arabic)
 very-acc Ahmad smart
 ‘Ahmad is very smart.’
- f. *meod_i, Dani [t_i ayef]. (Hebrew)
 very, Danny tired
 ‘Dani is very tired.’

Recall now that due to the one-way nature of the LBE generalization, not all languages without articles behave in the same way regarding LBE. They, however, do exhibit uniform behavior with respect to a number of other properties (see Bošković 2012). I will argue that the same holds for languages with affixal articles. Although they do not all behave in the same way with respect to adverb extraction, they exhibit uniform behavior with respect to a cluster of other properties which sets them apart both from languages like English, which have non-affixal articles, and languages like BCS, which do not have articles. In other words, they represent a separate type. However, before discussing other phenomena, I will first give an account of adverb extraction in the following section.

⁸ Out of three Arabic speakers all of which were from different areas, two found this sentence not to be acceptable in Standard Arabic or their local varieties (Yemeni and Egyptian), and one speaker of the Levantine dialect (in addition to the Standard variant) found these sentences acceptable in the Standard and Levantine (recall here the one-way nature of the generalization in question).

2.2.1. *Structural parallelism in the extended domain of N and A*

Recall that the generalization about adverb extraction in (7) makes reference to whether languages have or lack articles and what kind of article they have. Questions that this generalization raises are: What does lacking or having an article in the nominal domain have to do with extraction possibilities in the adjectival domain? That is, why does not having an article in the TNP coincide with the availability of extraction out of the TAP? Why do some affixal article languages behave differently from other languages with articles concerning adverb extraction, patterning with languages that lack articles in this respect? It is clear that the presence or absence of articles within the TNP cannot influence extraction possibilities within the predicative TAP directly. However, it is still possible that the two are indirectly related, as I will argue below.

First, LBE in the nominal domain and adverb extraction in the adjectival domain seem to be similar operations, although they make different cuts between languages. Before turning to adverb extraction, I will first discuss LBE in more detail and introduce an existing phase-based account of such extraction, and then return to the new generalization in (7). As mentioned briefly above, building on Uriagereka (1988) and Corver (1992), Bošković (2005, 2008a, 2012) establishes a correlation between the availability of adjectival LBE and the absence of articles across languages.

- (11) Only languages without articles may allow LBE, while languages without articles never allow it.

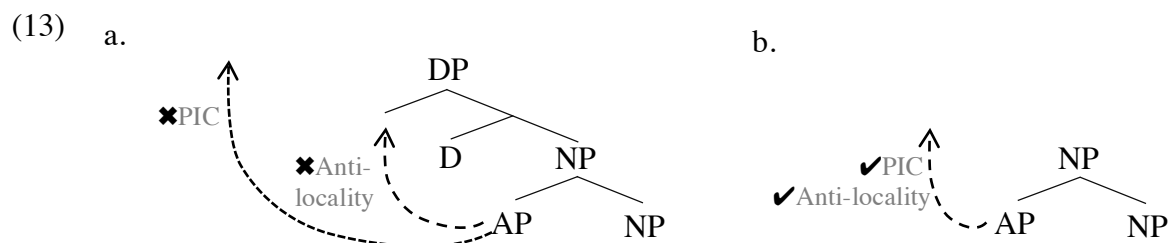
This is illustrated with examples from BCS, which allows LBE (in fact very productively), as in (12a), and English, which disallows it, as in (12b).

- (12) a. Pametni_i su oni [t_i studenti].⁹ (BCS)
 smart are they students
 ‘They are smart students.’
 b. *Smart_i they are [t_i students]. (English)

Bošković (2013a, 2014) argues that (11) follows from a structural difference between TNPs in the two groups of languages and gives an account of this split based on a contextual approach to phases. According to Chomsky (2000, 2001), phases define locality domains and determine what part of the structure is sent to spell-out at the relevant point of the derivation. After the point of spell-out, only the head of the phase and its edge remain accessible for further syntactic operations, which Chomsky formalizes as the *Phase Impenetrability Condition* (PIC). For Chomsky, vP and CP function as phases (in fact, they always function as phases regardless of the context in which they occur). However, a number of researchers have argued that whether XP is a phase or not can depend on its syntactic context (Bobaljik and Wurmbrand 2005; Bošković 2005, 2013a, 2014; Gallego and Uriagereka 2007; den Dikken 2007; Despić 2013; M.Takahashi 2011; Wurmbrand 2014; among others). Specifically, Bošković (2013a) argues that the highest projection in the extended domain of every lexical head (including N and A) functions as a phase. Phasehood of a phrase thus depends on the amount of structure projected in the extended domain of a lexical head, which can vary cross-linguistically. Within the nominal domain, DP is a phase in languages with articles. However, as noted above, many have argued that DP is missing in languages without articles (e.g. Fukui 1988; Corver 1992; Zlatić 1997; Chierchia 1998; Baker 2003; Bošković 2005,

⁹ Both long and short adjectives (see Chapter 1) can undergo LBE in BCS.

2008, 2012a, 2013a; Marelj 2008; Despić 2011, 2013)¹⁰; NP is then a phase in BCS, which lacks articles, as the highest projection in the TNP. What the generalization in (11) follows from in this system is an interaction of two locality constraints. First, given the PIC, phrasal movement out of a phase XP must proceed via SpecXP or XP-adjunction. Another relevant constraint, referred to as *anti-locality* by Grohmann (2003), is that movement steps cannot be too short (for arguments for anti-locality see: Bošković (1994, 2005, 2013a); Grohmann (2003); Abels (2003); Saito and Murasugi (1999); Boeckx (2005); Ticio (2003) among many others). In that regard, Bošković (1994, 2005) argues that a moving element must cross at least a full maximal projection (not just a segment). Bošković adopts the traditional assumption that APs originate as NP-adjoined. To move out of DP in languages with articles, an adjective then has to first move to SpecDP to satisfy the PIC, but this step violates anti-locality since it crosses only a segment of NP. This explains why LBE is disallowed in DP-languages. Since languages without articles lack the DP layer, NP-adjoined adjectives originate at the edge of the nominal phase (the NP) and can move out of it without violating any locality constraints.

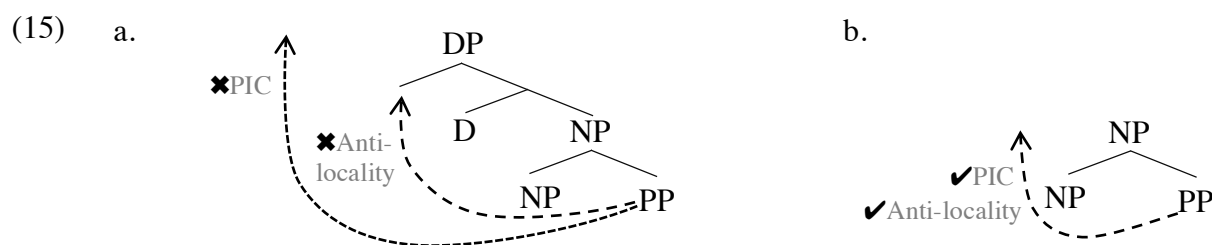


¹⁰ Some of these authors make the claim for specific languages or language groups. Bošković makes the claim for all languages without articles.

Similarly, following an observation by Stjepanović (1998), Bošković shows that NP-adjuncts other than APs are also only extractable in NP languages (See Bošković (2012) for a language survey in this respect as well as some interfering factors that need to be controlled for when testing the generalization with respect to other languages, especially because languages can differ regarding the adjunct/argument status of certain PPs). Compare English and BCS in (14).

- (14) a. *[From which city]_i did you meet [_{DP} [_{NP} [_{NP} girls] t_i]]? (English)
 b. [Iz kojeg grada]_i si sreo [_{NP} [_{NP} djevojke] t_i]? (BCS)
 from which city are met girls
 (Bošković 2005:10)

This is accounted for in the same way as (12). The PP originates as NP-adjoined, it then needs to move to SpecDP (due to the PIC). This step is blocked by anti-locality because it does not cross a full maximal projection.



Furthermore, LBE is also impossible even in languages without articles if the NP from which LBE takes place is embedded in another NP, as illustrated by BCS (16):

- (16) *Pametnih_i on cijeni [_{NP1} prijatelje [_{NP2} t_i [_{NP2} studenata]]]? (BCS)
 smart.GEN he appreciates friends.ACC students.GEN
 cf. On cijeni prijatelje pametnih studenata.
 'He appreciates friends of smart students?'
 (Bošković 2013a: 89)

Recall that, being the highest projection in the TNP, NP is a phase in BCS. Since the higher NP is a phase in (16), the AP must move to its Spec, given the PIC, which violates anti-locality. Therefore, for an adjective to move out of an NP, there must not be a phase projected right on top of it. More generally, it follows from the system that it is impossible to extract an element adjoined to the complement of a phase head.¹¹ Thus, the amount of structure projected within the extended domain of a lexical category correlates with the extraction possibilities of elements contained in it. Extraction possibilities can then be used to some extent¹² as a diagnostic for the amount of structure present within the extended projection the moving element originates in.

Turning to adverb extraction out of predicative TAPs, we have seen that languages that lack articles allow it (3), while non-affixal article languages like English disallow it (2).¹³ Given this, I will pursue here the idea of a structural parallelism between different extended projections. More specifically, I propose that the data in (2)-(3) suggest that, within a single language, extended projections of different lexical categories are uniform with respect to their structural complexity.¹⁴

(17) *Structural Parallelism:*

- a. If a language always requires functional structure within TNP (DP), it also always requires functional structure in TAP (let us call it XP_{AP}).
- b. If a language allows a bare NP, it also allows a bare AP.

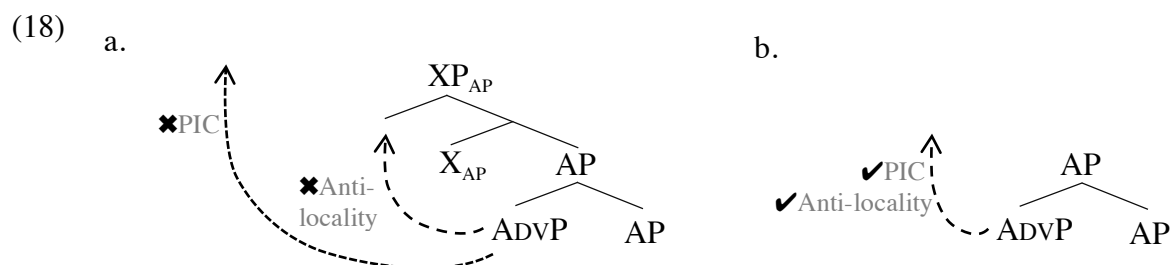
¹¹ See also Abels's (2003) generalization that complements of phasal heads cannot move. Movement of phasal complements and adjuncts to phasal complements is in fact blocked in the same way.

¹² The qualification "to some extent" is there because the generalizations about LBE and about adverb extraction are one-way correlations. As a result, it is possible only to make tentative conclusions based on languages that disallow these extractions; it is necessary to see how such languages behave with respect to other phenomena in the relevant domains, which I will do in the following sections.

¹³ I put affixal article languages aside for the moment.

¹⁴ It is possible that the parallelism holds *only* for projections of N and A by virtue of them being [+N]. Another possibility, noted briefly below (see Section 2.5) is that the parallelism is broader and holds for all lexical categories. I put aside the second possibility here.

Assuming that intensifying adverbs are AP-adjoined (18) (parallel to adjectives in the TNP (13)), the difference between languages with and without articles in (2)-(3) can then be easily captured under the contextual approach to phases. Recall that under this approach, the highest projection in an extended domain of a lexical category functions as a phase. In English-type languages from (2), DP is always present within the TNP, so these languages then also always have an XP_{AP} in the TAP by parallelism (13a)/(18a). In BCS-type languages from (3), TNP can be a bare NP due to the lack of DP, so these languages lack the XP_{AP} in the TAP as well (13b)/(18b).



Then, in languages that have XP_{AP} in their adjectival domain, XP_{AP} functions as a phase, but in languages with bare AP, AP functions as a phase. To move out of a TAP, the adverb needs to move to the edge of TAP unless it originates at the edge. In languages in (2), where XP_{AP} is projected above AP as in (18a), this step violates anti-locality. Alternatively, moving the adverb out of the XP_{AP} phase without stopping in $SpecXP_{AP}$ violates the PIC (18a). Contrary to that, there is no XP_{AP} above AP in languages in (3), so AP is a phase. The adverb is adjoined to the AP, hence already at the edge of the adjectival phase, and ready to move out of it (18b). We thus account for the contrast between English-type languages in (2) and BCS-type languages in (3) regarding the possibility of adverb extraction. In fact, the contrast is accounted for in the same way as the contrast between the languages in question regarding LBE, as discussed above (see (13)). Both LBE and adverb extraction are blocked in languages with non-affixal articles because of the presence of the

functional layer in the relevant domains, but these extractions are allowed in languages without articles because those functional layers are missing.

Now, as we have seen above, affixal article languages like Bulgarian, Icelandic and Romanian are different from languages with non-affixal articles in that they disallow LBE and allow adverb extraction. Thus, these languages represent a separate third type of languages, which in some cases behave like languages with non-affixal articles and in some cases as languages without articles.

2.2.2. Two different motivations for functional structure

To understand the behavior of these languages, it is important to note that the amount of structure in the extended domain of a lexical category in a language can vary in different constructions in the same language. That is, languages that allow bare lexical projections may have functional structure in the presence of additional functional items in the nominal and the adjectival domain. Regarding the nominal domain, Bošković (2013a, 2014) argues that TNP is not always a bare NP in BCS; in some constructions there can be functional structure above TNP in BCS. Typically, the TNP is a bare NP in BCS. Apart from the fact that BCS allows LBE (12), this is also reflected in the fact that BCS does not allow extraction of genitive-marked nominal complements like the ones in (19). The TNP from which extraction takes place here is a bare NP, which means that the NP is a phase. To move out of NP, the complement of N has to move via SpecNP due to the PIC, but this violates anti-locality (As noted in fn. 11, Abels (2003) argues that phasal complement extraction is quite generally disallowed for this reason).

- (19) ?*[Ovog studenta]_i sam pronašla [_{NP} sliku t_i]. (BCS)
 this.GEN student.GEN am found picture.ACC
 ‘Of this student I found a picture.’

(Bošković 2012: 204)

However, Bošković (2012, 2014) argues that certain quantifiers and numerals do project a phrase, QP, above NP in BCS when they are present. In such cases, QP, rather than NP, is a phase. Importantly, complement extraction improves in the presence of a quantifier within the TNP. Consider the contrast between (19) and (20).

- (20) [Ovog studenta]_i sam pronašla [_{QP} mnogo/deset slika t_i]. (BCS)
 this.GEN student.GEN am found many/ten pictures.ACC
 ‘Of this student I found many/ten pictures.’

(Bošković 2012: 205)

Here, NP is not a phase due to the presence of an additional projection above it in the domain of N; rather QP is the phase as the highest projection in the domain here. Then, the complement moving out of the TNP in (20) has to go through the specifier of the QP, not the specifier of the NP. Such movement satisfies both the PIC and anti-locality.

Similarly, in the presence of an additional affix on an adjective, the extended domain of A also contains functional structure in BCS, as I will argue in more detail in Chapter 4. This language has two forms of adjectives. The form given in (3a) is the so-called “short form”, which occurs both in the predicative and in the attributive position. With this form adverb extraction is possible in both (3a) and (21a). In the “long form” given in (21b), which can only occur in the attributive position, an additional affix is present (see Aljović 2002; Talić 2015a; and Chapter 4 for more details). With this form, adverb extraction is not possible (21b). As discussed in Chapter 4, the

long form here is a realization of a functional head associated with specificity in the domain of A, and this projection blocks adverb extraction, in the same way adverb extraction is blocked in languages that always have functional structure above AP.

- (21) a. Izuzetno_i su kupili [t_i skup] automobil. (BCS)
 extremely are bought expensive.SF car
 ‘They bought an *extremely* expensive car.’
 b. *Izuzetno_i su kupili [t_i skupi] automobil.
 extremely are bought expensive.LF car

I return to discussing crosslinguistic variation in adverb extraction from attributive TAPs in Chapter 4, where I also investigate morphological and prosodic differences between long and short adjectives in BCS in more detail. What matters here is the correlation between the possibility of adverb extraction and additional structure, which is captured under the proposed analysis.

Crucially, functional structure in a domain can have two different sources - in languages that never allow bare lexical projections (17a), functional structure is present for deep formal (i.e. syntactic) considerations (the setting of the relevant parameter in these languages). Thus, in languages like English, where DP is always projected in the domain of N, XP_{AP} is also always projected in the domain of A. In contrast, in languages that may allow bare lexical projections (17b), functional structure is absent due to the parameter setting in the basic cases. However, when there is additional semantic motivation and morphology realizing an additional functional head (this will be made more precise below), then even in these languages functional structure can be projected ((17b) does not prevent this possibility). In languages like BCS, where NP and AP are typically bare, additional structure is projected in the domain of N in the presence of functional

heads like quantifiers (see Despić 2011 and Bošković 2014), as well as in the domain of A in the presence of a functional head indicated by an additional affix, as in (21b).

In the following sections I turn to discussing the motivation for functional structure in affixal article languages and investigating a number of phenomena (superlatives, the majority reading of *most*, adjunct extraction, exhaustivity with possessives, weak definites) where affixal article languages have an option to drop the definite article and where they exhibit dual behavior, patterning with languages with non-affixal articles when the article is present, but with languages without articles when the article is dropped.

2.3. Article-drop in affixal article languages

Affixal article languages are particularly interesting for our investigation of structural parallelism between the nominal and the adjectival domain because some of them (Bulgarian, Icelandic, and Romanian) allow adverb extraction in the adjectival domain, even though they disallow LBE in the nominal domain. It is first worth noting here that articles in these three languages are quite different from what is usually found in other languages with articles regarding their PF manifestation. With respect to their PF manifestation, the definite article in Bulgarian, Icelandic, and Romanian is an affix/clitic and never occurs DP-initially where articles typically occur in languages with head-initial projections in the TNP. Rather, the article occurs as a suffix/clitic on the noun in Icelandic (e.g. Sigurðsson 1993) and as a suffix/clitic on the first element within the TNP in Romanian and Bulgarian, which does not have to be the noun (Dobrovie-Sorin & Giurgea

2006).¹⁵ The PF manifestation of articles in Icelandic, Bulgarian, and Romanian is thus very different from languages like English. Languages like Danish, Norwegian, and Swedish are also similar to Icelandic in the basic cases where a definite DP contains only an article and a noun in that they also have a suffix on the noun instead of a free prenominal article. Thus, in the basic cases they also differ from languages like English regarding the PF manifestation of the definite article. The definite article in Arabic and Hebrew is a prefix, so despite being DP initial it differs in its PF-manifestation from *the* in English in that it is not a morphologically free item. Crucially, while English *the* has an accented form in addition to the weak form, there is no such distinction in Arabic and Hebrew. Furthermore, the different PF realization of the article between languages like English and affixal article languages has another consequence: since the definite article is an affix on a noun, the affix can be taken to realize a feature on the noun (like Case) that needs to be licensed by a syntactic head, instead of being base generated in a separate head position (in other words, the PF manifestation of articles in affixal article languages is compatible with both)¹⁶. In the rest of the chapter, I will take “different PF manifestation” to be in principle motivated by these kinds of issues.¹⁷

¹⁵ Whether the Bulgarian article is a clitic or an affix is not entirely clear because it can attach to a noun, an adjective, an AP with an intensifier, or a quantifier (Franks and King 2000). The diversity of hosts points to its clitic status, according to one of Zwicky and Pullum’s (1983) criteria. However, Halpern (1992) and Franks and King (2000) argue that it is a suffix (see also Dobrovie-Sorin and Giurgea 2006 regarding Romanian). The article in Icelandic is often classified as a suffix because it always attaches to a noun. However, given that it has its own inflection, it also may be a clitic. I refer to both languages as affixal article languages because the difference between an affix and a clitic does not matter for our purposes here.

¹⁶ See, for example, Lasnik’s (1995) idea that all verbs in French and *have* and *be* in English enter the derivation fully inflected and that the inflectional morphology only gets licensed through feature checking by functional heads (cf. Chomsky 1993). Thus, when an auxiliary verb is present, the source of tense morphology is separated from the verb. On the other hand, when tense is morphologically an affix on the lexical verb, it can either come with the verb from the lexicon (French for Lasnik) or enter the derivation in a higher functional head (English for Lasnik). This is a similar situation to the one noted above with respect to free standing and affixal articles.

¹⁷ Note that from the point of view of language acquisition, there also seems to be a difference between a definite article like in English and affixal articles. It has been reported that children acquiring English often omit the article, and even when they start using it, 2-4-year-olds make a lot of mistakes in using the definite

Furthermore, languages with affixal articles have been argued to behave differently from typical languages with articles with respect to several phenomena. For example, Bošković (2008b) shows for a number of affixal article languages (Bulgarian, Swedish, Romanian, Norwegian, Hebrew, and Albanian), that they can void certain islandhood effects. This is illustrated with examples of Bulgarian, Icelandic, and Romanian being insensitive to wh-islands in the examples below.

- (22) a. *I saw a book which I wonder who knows who sells. (English)
 b. Vidjah edna kniga, kojato_i se čudja koj znae (Bulgarian)
 saw one book which-the SE wonder who knows
 koj prodava t_i.
 who sells (Bošković 2008b:259)
 c. Petta er lagið sem Jón spur-ð-i hver hef-ð-i skrifað.
 this is song.the that Jón asked-past-3 who have-past-subj written
 ‘This is the song that John asked who wrote.’ (Bošković 2008b:263)
 d. Am vāzut o carte pe care mā întreb (Romanian)
 have.1sg seen a book for which myself wonder
 cine o vinde.
 who sells
 ‘I saw a book which I ask myself who sells.’ (Bošković 2008b:262)

Moreover, Reuland (2011) and Despić (2015b) observe that languages with affixal articles allow reflexive possessives, unlike languages with typical non-affixal articles (I discuss this in more detail below; see Section 2.4.1). Most importantly, despite Bulgarian, Icelandic, Romanian, Danish, Norwegian, Swedish, and Arabic being languages that have a definite article in their

article (Brown 1973; Warden 1976; see also Koulidobrova to appear for an NP/DP perspective on this). In contrast, Anderssen (2007) notes that affixal article in Norwegian is acquired as early as 2;0.5. This may suggest that children treat the suffixal article in Norwegian as a realization of a feature on the noun (like Case), i.e. they could be going through an NP stage at this level. This is also supported by children omitting the non-suffixal determiner that occurs in contexts with adjectives very frequently even at the age of 2;7.8 (Anderssen 2007).

vocabulary inventory, we will see below that the article can actually be dropped in these languages where it can never be dropped in English type-languages, which I will interpret as independently indicating that these languages in some contexts can lack DP. I will discuss below why these languages have bare lexical structure in fewer contexts. What is important for us here is that when the article is dropped, these languages behave like languages without articles, as also observed for a number of phenomena in Bulgarian by Dubinsky and Tasseva-Kurktchieva (2014) and Pancheva and Tomaszewicz (2014). I will also show that Icelandic and Romanian, and to some extent Danish, Norwegian, Swedish, and Arabic, behave in a similar fashion. Given all this, it is reasonable to treat Bulgarian, Romanian, Icelandic, Danish, Norwegian, and, Arabic as languages that do not in principle require functional structure in the extended projections of their lexical categories (cf. (17b)). The possibility of adverb extraction out of predicative TAPs in these languages can be accounted for in the same way as in languages without articles (I return to LBE below). Recall, however, that this does not mean that the languages in question *cannot* have functional structure above NP and AP. The current proposal blocks certain languages from ever having bare NP and AP, but it does not require that any language always has only bare NPs and APs. As a result, while affixal article languages belong to languages that in principle allow bare lexical projections (17b) (bare AP and bare NP), they still may have functional projections in the relevant domains. In languages that disallow bare lexical projections, it is natural to assume that functional structure is present due to a formal syntactic requirement, such as feature checking.¹⁸ In contrast, in languages that in principle allow bare lexical projections, and do not require functional structure for formal reasons, I suggest that when functional structure is present, it has to be

¹⁸ The intuitive idea is straightforward: lexical heads in such languages have a feature-checking requirement that necessitates the presence of a functional head above them (Note that this means that there are null Ds in languages like English; in this respect, see e.g. Bošković in press).

motivated by interface considerations. This means that it either has to have overt PF manifestation, and/or that it is required by semantics. Otherwise, it will not be there.

Consider affixal article languages investigated here from this perspective. These languages are different from languages like BCS which also in principle allow bare lexical structure in that they have articles in their vocabulary inventory. Crucially, Chierchia (1998) argues that articles in languages that have them contribute to the interpretation of the TNP; in particular, they are responsible for interpretations that are achieved by pure type-shifting operations in languages that do not have articles. For example, the definite article *the* has the meaning of the iota-operator in semantics; it changes expressions of type $\langle e, t \rangle$ to e . In languages that do not have articles like BCS, the interpretation of NPs as type e is attained through pure type shifting in semantics.¹⁹ Regarding type shifting, Chierchia formalizes the *Blocking Principle*, under which covert type shifting in semantics is not available for any type shifting operation for which there is an overt item in the language that contributes its meaning. Given the Blocking Principle, in languages that have articles contributing the meaning of the type shifting operators, the corresponding covert type shifting is not available.²⁰ What this means for affixal article languages is that even though the presence of functional structure in the TNP in these languages is not required by parallelism (17), the right semantic interpretation cannot be achieved most of the time without projecting a DP. The mere existence of articles as vocabulary items in these languages blocks the possibility of covert type shifting operations in semantics which are available in languages that lack articles. Therefore, even though affixal article languages in principle belong to the NP-type languages (in that in

¹⁹ This is how Chierchia treats Slavic languages without articles (Bošković (in press) extends this analysis to all languages without articles).

²⁰ It is worth noting here that the relevant interpretation (broadly associated with definiteness) is not the same in languages with articles and languages without articles; e.g. the two in some contexts differ with respect to the presupposition of uniqueness/exhaustivity, as discussed by Partee (2006) and Bošković (2012) (see also Section 2.3.2.3), who attributes this to the presence/absence of DP in definite contexts.

principle they can have a bare NP), this is obscured in these languages in most TNPs because they have articles. As a result, DP projects within the TNP, which is why these languages behave like other DP languages with respect to LBE and disallow it (4). Affixal article languages are then different from prototypical DP languages with non-affixal articles in that the presence of their articles, which also have non-standard PF manifestation as discussed above, is motivated by the semantics and the existing vocabulary item for definiteness, not by formal (syntactic) reasons.

Under the current proposal, we would expect affixal article languages like Bulgarian to be less of DP languages than, for example, English. As noted above, their articles are different from the ones in English in their PF manifestation, which has consequences for the nominal domain (i.e. spell-out within this domain; see Section 2.4 below). But more importantly, given the above discussion, we would expect affixal article languages to be able to drop articles where they are not semantically motivated. We indeed find some contexts of this sort in all of the affixal article languages under consideration. One such context concerns superlatives, which I turn to first.

2.3.1. *Superlatives*

It has been noted that the definite article in superlatives does not contribute the definiteness interpretation it has in non-superlative contexts. This is visible from the lack of a definiteness effect in the context of superlatives. For instance, while extraction out of indefinite DPs like in (23a) below is possible, the definite DPs like in (23b) disallow such extraction, which is usually referred to as the definiteness effect.

- (23) a. Who_i did you see pictures/a picture of t_i ?
 b. *Who_i did you see the/these pictures of t_i ?

However, superlative DPs, despite the presence of the definite article, do not induce the definiteness effect (Szabolcsi 1986; Ticio 2003).

- (24) Who_i did you see the best picture of t_i ?

Furthermore, in superlatives, uniqueness is standardly assumed to be imposed by the semantics of the *-est* morpheme (see, for example, Sharvit and Stateva 2002). Therefore, *the* in English superlatives appears to be present merely for formal reasons, it is essentially an expletive. On certain readings of superlatives, it even has to be interpreted as indefinite, which is why Heim (1999) treats *the* as a semantically vacuous element in this context.

Importantly, precisely in this context where the presence of the definite article is not motivated by semantics, affixal article languages can omit the article, which has consequences for the interpretation of superlative expressions. The interpretation of superlative expressions like (25a) depends on the comparison class relevant for their evaluation (see Szabolcsi 1986; Pancheva and Tomaszewicz 2012, a.o.). For the reading in (25b), the DP *the best albums by U2* determines the comparison class: a set of albums by U2 in a given context without considering who has them (absolute reading). In (25c) the comparison class is determined by *John*, an element *external* to the superlative: the albums whose quality is compared are albums owned by John and by other alternatives to John (relative reading with external focus (REF)). In (25d) the comparison class is determined by *by U2*, an element *internal* to the superlative DP: the albums whose quality is compared are albums by U2 and albums by other alternatives to U2 (relative reading with internal

focus (RIF)). Crucially, Pancheva and Tomaszewicz (2012) note that the RIF reading is not available in languages like English in adjectival superlatives (25) or superlatives of quantity (26).

- (25) a. John has the best albums by U2.
 b. ‘John has the best albums U2 has ever made.’ (absolute)
 c. ‘John has better albums by U2 than anyone else does.’ (REF)
 d. #‘John has better albums by U2 than by any other band.’ (RIF)
- (26) a. John has the most albums by U2.
 b. ‘John has more albums by U2 than anyone else does.’ (REF)
 c. #‘John has more albums by U2 than by any other band.’ (RIF) (P&T 2012:294)

On the other hand, the RIF reading is available in Slavic languages without articles (Pancheva and Tomaszewicz (2012) discuss Polish, Czech, BCS, and Slovenian in this respect), as in the example from Polish below:

- (27) a. Iwan ma naj-lepsze albumy U2. (Polish)
 Ivan has SPRL-better album.ACC.PL U2
 b. ‘Ivan has more albums by U2 than anyone else does.’ (REF)
 c. ‘Ivan has more albums by U2 than by any other band.’ (RIF) (P & T 2012:295)

Importantly, Bulgarian can either use the definite article or drop it in superlatives. When the article is present, as in (28a), Bulgarian behaves like English, i.e. the sentence cannot have the RIF reading (28d). However, when the article is absent (28b), both readings in (28c-d) are available, just like in Slavic languages without articles (Pancheva and Tomaszewicz 2012).

- (28) a. Ivan ima naj-dobri-te albumi ot U2. (Bulgarian)
 Ivan has SPRL-good-the albums by U2. (P&T 2012:296)

- b. Ivan ima naj-dobri albumi ot U2.
 Ivan has SPRL-good albums by U2 (P&T 2012:295)
- c. ‘Ivan has better albums by U2 than anyone else does.’ (REF)
- d. ‘Ivan has better albums by U2 than by any other band.’ (RIF)

We find the same contrast in Bulgarian superlatives of quantity, where in the presence of a definite article the RIF reading is not available, but it is available if the article is dropped.²¹

- (29) a. Ivan ima naj-mnogo-**to** albumi ot U2. (Bulgarian)
 Ivan has superlative-many-**the** albums by U2. (P&T 2012:296)
- b. Ivan ima naj-mnogo albumi ot U2.
 Ivan has superlative-many albums by U2 (P&T 2012:295)
- c. ‘John has more albums by U2 than anyone else does.’ (REF)
- d. ‘John has more albums by U2 than by any other band.’ (RIF)

The definite article can also be dropped in some superlatives in Icelandic although it does not seem to lead to the same semantic contrast as in Bulgarian (30a).²²

- (30) a. Jón á bestu plötu U2. (Icelandic)
 John owns best album U2
- b. *Jón á bestu plötu-**na** U2
 John owns best album-**the** U2
- c. Jón á bestu plötu-**na** frá U2
 John owns best album-**the** from U2

²¹ Romanian superlatives are formed with the AP constituent *cel + mai* ‘more’ + A (Dobrovie-Sorin and Giurgea 2006). The affixal article is not used if the superlative (i.e. the constituent in question) precedes the noun, which is what is important for our purposes (if it follows the noun, the affixal article does attach to the noun). It may be worth noting that the element *cel* also occurs with cardinal numerals and adjectives co-occurring with elided nouns (Dobrovie-Sorin and Giurgea 2006); it can also optionally precede a postnominal adjective, in which case an affixal article is present on the noun (see Marchis and Alexiadou 2009, who also show that *cel* is not an article).

²² There are differences between Bulgarian and Icelandic superlatives that need not concern us here. I focus here on the fact that superlatives can occur without a definite article in these languages, which is what is important for our purposes.

- d. *Jón á bestu plötu frá U2
John owns best album from U2
'John has the best albums by U2.'

As noted above, the presence of the definite article in superlative contexts is not required by the semantics. This means that in Bulgarian and Icelandic superlatives in which the definite article is also not phonologically present, there is no interface motivation for the presence of DP (it is not required by the semantics and it has no PF manifestation), it then follows that DP is not projected in such cases (recall that there is no feature-checking, i.e. syntactic motivation for its presence in languages like Bulgarian). Crucially, Shen (2014) discusses the semantic contrast in Bulgarian superlatives observed by Pancheva and Tomaszewicz (2012) (28)–(29), based on which he argues for the absence of DP in (28b) and (29b). Shen (2014) argues that the RIF reading in (28d) and (29d) is possible only if the NP internal focus can move outside of TNP, which in the English examples in (25a) and (26a) and the Bulgarian examples in (28a) and (29a) is blocked by the DP layer, but not in the Bulgarian examples in (28b) and (29b) (see Shen (2014) for details of the account) because in the latter case DP is not present.

Danish, Norwegian, and Swedish also omit the affix, with superlatives of quantity, as illustrated below with examples from Swedish (31). Again, the presence/absence of the articles here affects the meaning of the sentence in a parallel fashion as in Bulgarian. When the article is present, the sentence in these languages gets a proportional reading ('more than half of the albums U2 has ever made'); it cannot get the relative reading with internal focus (parallel to English and Bulgarian with article). However, when the articles are absent the sentence gets both relative readings (31c-d) (parallel to BCS and Bulgarian when the article is dropped).

- (31) a. John har **de** flesta plattorna av U2. (Swedish)
 John has the most albums by U2
 ‘John has most of the albums by U2.’ (proportional)
- b. John har flest plattor av U2.
 John has most albums by U2
 ‘John has the most albums by U2.’
- c. ‘John has more albums by U2 than anyone else does.’ (REF)
- d. ‘John has more albums by U2 than by any other band.’ (RIF)

However, Danish, Norwegian, and Swedish cannot drop the article(s) in adjectival superlatives. With respect to the relative readings, these three languages behave like English (and Bulgarian option with the definite article); they allow only the REF relative reading in (32d), as expected given the above discussion.

- (32) a. John har de bedste CD'er med U2. (Danish)
 John has the best CDs by U2
 ‘John has the best albums by U2.’
- b. John har de beste albumene av/til U2. (Norwegian)
 John has the best albums of/by U2
 ‘John has the best albums of/by U2.’
- c. John har de bästa albumen med U2. (Swedish)
 John has the best albums by U2
 ‘John has the best albums by U2’
- d. ‘John has better albums by U2 than anyone else does.’ (REF)
- e. #‘John has better albums by U2 than by any other band.’ (RIF)

The above discussion indicates that the DP layer can be missing in some cases in all Scandinavian languages, not just Icelandic.

Turning to the third group of affixal article languages, recall that in Arabic the definite article is a prefix. In the presence of adjectives within a nominal phrase, the article appears on both the noun and the adjective. In a nominal phrase with a superlative, there are three options. First,

when the article is present on both the adjective and the noun in a superlative nominal phrase in Arabic, as in (33a), the sentence gets an absolute reading, as in (33b).

- (33) a. lada John **al**-albumaat **al**-afdhal li U2. (Standard Arabic)
owns John **the**-albums **the**-best for U2
'John has the best albums by U2.'
- b. John has the best albums that U2 has ever made. (absolute reading)

Importantly, in Arabic, it is possible to drop the article with superlatives either from just the adjective, or from both the adjective and the noun. When the article on the adjective is dropped, but present on the noun (34a), the sentence gets the interpretation in (34b). This interpretation is not available in English and in Bulgarian when the article is present, but it is available in Bulgarian when the article is dropped. Therefore, we see a similar effect of dropping the article on the interpretation here in Arabic.²³

- (34) a. lada John afdhal **al**-albumaat li U2. (Standard Arabic)
own John best **the**-albums for U2
'John owns the best albums by U2.'
- b. John has better albums by U2 than by any other band. (RIF)

And finally, the sentence in (35a) has no article on either the adjective or the noun, and it gets the relative reading in (35b), which is available in English, in Bulgarian superlative nominal phrases with an article, and in languages without articles.

²³ It could be that the article attached to the adjective here is the real article, while what is found on the noun could be a marker similar to the one found with BCS "long from" adjectives (where the long form has a specificity marker). This, however, requires more investigation.

- (35) a. lada John afdhāl albumaat U2. (Standard Arabic)
 own John best albums U2
 ‘John owns the best albums by U2.’
 b. John has better albums by U2 than anyone else does. (REF)

Therefore, all of the affixal article languages investigated here omit the definite article in superlatives in some contexts. This is more restricted in Danish, Norwegian, and Swedish, but when the article is dropped in most of these languages, the superlative gets an interpretation that is unavailable to languages with articles. I interpret this as indicating that in such contexts the DP layer can be missing in these languages. In the following section, I discuss additional phenomena pointing to a similar conclusion.

2.3.2. Other phenomena

2.3.2.1. Majority ‘most’

Another property where languages with articles differ from languages that lack articles concerns the kinds of readings available for sentences with *most*. Živanović (2007) observes that there is a cross-linguistic variation with respect to readings in sentences containing *most* like (36a). Slovenian in such sentences can have only the relative reading in (36b), but crucially it cannot have the majority reading in (36c).

- (36) a. Najveć ljudi pije pivo.
most people drink beer
b. ‘More people drink beer than any other beverage’ (Relative reading)
c. #‘More than half people are drinking beer.’ (Majority reading)
- (Živanović 2007: 36)

In parallel sentences in German, both readings are available.²⁴

- (37) a. Die meisten Leute trinken Bier.
the most people drink beer
b. 'More people drink beer than any other beverage' (Relative reading) (focus on *beer*)
c. 'More than half people are drinking beer.' (Majority reading)
(Živanović 2007: 36)

²⁴ BCS patterns with Slovenian in this respect. It is not possible to force a majority reading in (i) even with focus.

- (i) Najviše studenata zna Ivana.
most students knows Ivan
'More students know Ivan than anyone else' (relative reading with external focus)
'More than half students know Ivan.' (majority reading)

The number of students who know Ivan is merely contrasted with the number of other individuals (e.g. professors) who know Ivan. This sentence is compatible with any context where the number of students who know Ivan is larger than the number of individuals from other sets who know Ivan. Whether that number is less than half of the students (i.e. a minority of students) or more than half of the students is not a piece of information that can be concluded from the sentence (i) alone, nor is it relevant here since the sentence gets a relative reading.

To express the majority reading, BCS uses the noun *većina* – 'majority'.

- (ii) Većina studenata zna Ivana.
majority students knows Ivan
'More than half of the students know Ivan.' (majority reading)
'More students know Ivan than anyone else.' (relative reading)

The unavailability of the majority reading of *most* in BCS is clearer in the following context: There are five students at the party. The hosts have provided three different types of drinks. Students are allowed to drink different types of drinks. We are interested in what kind(s) of drink everyone had.

- (iii) Student 1: lemonade Student 4: *beer* and **wine**
 Student 2: lemonade and **wine** Student 5: *beer* and **wine**
 Student 3: *beer* and **wine**

In this scenario, it is true that more people drink **wine** than any other drink. It is also true that the number of students who drink **wine** is more than a half. It is possible to use the sentence (iv) below in this context because the relative reading of *most* is available. This sentence, however, does not also get the majority reading of *most*. We can test this by considering a context where the relative reading is not available at all. Here, this is the context with *beer*. Since *beer* is not the most popular drink in (iii), it is not true that more students drink *beer* than any other drink (i.e. the relative reading is not available). However, in (iii) it is true that more than half of the students drink *beer*. If the majority reading of *most* were available in BCS, the sentence (v) below should be felicitous in this context, although the relative reading of this sentence is not available. However, the sentence (v) cannot be used in this context.

- (iv) Najviše studenata pije vino.
most students drink wine.
'Most students drink wine.'
(v) #Najviše studenata pije pivo.
most students drink beer
'Most students drink beer.'

As discussed by Bošković and Gajewski (2011), English *most* is associated with both the majority and the relative reading, but in different contexts.

- (38) a. Bill owns most Radiohead albums.
 ‘Bill owns more than half of the Radiohead albums.’ (Majority reading)
- b. BILL owns the most Radiohead albums.
 ‘Bill owns more Radiohead albums than any relevant alternative
 individual does.’ (Relative reading)
- (Bošković and Gajewski 2011: 122)

Živanović (2007) observes that the split between the two types of languages in allowing the majority reading of *most* correlates with whether they have articles or not. Crucially, languages that have articles, including Bulgarian, Macedonian, Norwegian, and Romanian allow the majority reading of *most* parallel to languages like English (see Bošković 2012 for additional languages).²⁵ As Bošković and Gajewski (2011) note, the correlation between having a definite determiner and allowing the majority reading of *most* is bidirectional:

- (39) a. Every language that allows the majority reading of *most* has a definite determiner.
b. Every language that has a definite determiner (and has *most*) allows the majority reading.
- (Bošković and Gajewski 2011: 123)

Bošković and Gajewski (2011) account for this variation in available readings by appealing to cross-linguistic variation in the syntax regarding whether languages have a DP or not, and Hackl's (2009) account of *most* as the superlative of *many*, where the majority and relative readings are

²⁵ Note that what is relevant here is the “determiner” most. Languages that use a noun like *majority* to express the majority reading of a nominal expression are not relevant for our purposes.

reduced to narrow and wide scope of the operator (degree quantifier) *-est*. The degree quantifier *-est* is assumed to be generated in a position where it has a type mismatch with its sister, the adjective *many*, and therefore it needs to undergo QR out of that position. There are two potential landing sites for such an operation. One is internal to TNP and the other one is external to the TNP. Bošković and Gajewski (2011) argue that what makes the majority reading of *most* available in languages that have articles is that the TNP internal position for QR is available, but in languages that lack articles, this position is not available (due to the simpler TNP structure), making it impossible for them to have the majority reading. Both types of languages can get the relative reading of *most* because *-est* can QR outside the TNP. With respect to Bulgarian expressions with *most*, Dubinsky and Tasseva-Kurktchieva (2014) observe a very interesting pattern: whether a sentence with *most* gets a majority reading or relative reading depends on whether *most* in Bulgarian occurs with a definite article or not. Crucially, when the article is dropped (40a), the majority reading (40b) is not available and the sentence gets the relative reading (40c) as in article-less languages; but when the article is present (40d), the sentence gets the majority reading (40e), the relative reading being unavailable (40f).^{26 27}

²⁶ This is different from German and English, where the relative reading is also available when the article is present.

²⁷ A parallel sentence in Icelandic (ia) gets the majority reading (strong preference), as well as the relative reading with an appropriate context. In Romanian (ib), the majority reading seems to be the only one available. However, Icelandic, and Romanian do not have a contrast parallel to Bulgarian sentences with and without the article in (40). I leave open here what is responsible for the difference between Bulgarian, and Icelandic and Romanian in this respect.

- (i) a. Flest fólk drekkur bjór. (Icelandic)
 most people drink beer
 ‘Most people drink beer’
- b. Mai multi oameni beau bere. (Romanian)
 more many.3.M.PL people drink beer
 ‘Most people drink beer.’

- (40) a. Poveče hora poznavat Ivan. (Bulgarian)
 more people know Ivan
 b. #’More than half of the people know Ivan.’ (Majority reading)
 c. ‘More people know Ivan than know anyone else.’ (Relative reading)
- d. Poveče-**to** hora poznavat Ivan.
 more-**the** people know Ivan
 e. ‘More than half of the people know Ivan.’ (Majority reading)
 f. # ‘More people know Ivan than know anyone else.’ (Relative reading)
- (Dubinsky and Tasseva-Kurktchieva 2014)

In contexts with *most*, Norwegian patterns with Bulgarian in that it can also either drop the article or use it in these constructions. Just like in Bulgarian, the use of the definite article in this context affects the interpretation. Crucially, when the article is dropped, the sentence gets only a relative reading (41c) that is available in Bulgarian when the article is dropped; it cannot get the majority reading (41b) that is available in non-affixal article languages and in Bulgarian when the article is used. However, Norwegian does not behave like Bulgarian when the article is used. The sentence in (41d) can only have an absolute reading as in (41e), but it cannot have the majority reading (41f) or the relative reading (41g).

- (41) a. Flest mennesker kjenner John. (Norwegian)
 most people know John
 b. # 'More than half of people know John.' (Majority reading)
 c. 'More people know John than anyone else.' (Relative reading)
 d. **De** fleste mennesker kjenner John.
 the most people know John
 e. 'Most people [e.g. in the world] know John.' (Absolute reading)
 f. # 'More than half of people know John.' (Majority reading)
 g. # 'More people know John than anyone else.' (Relative reading)

To get the majority reading in Norwegian, it is necessary to add a postmodifier, as in (42). Notice that with this reading the article is present.

- (42) a. **De** fleste menneskene her i byen kjenner John. (Norwegian)
 the most people here in town know John
 b. ‘More than half of people in this town know John.’ (Majority reading)

Turning to Danish, importantly for our purposes, it is also possible to drop the article in this context, and when the article is dropped, as in (43a), the sentence only has a relative reading (43c), parallel to Bulgarian and Norwegian. When the article is present, only the majority reading is possible if the noun *mennesker* ‘people’ is present (43d), but if the noun is omitted, then the relative reading is possible.

- (43) a. Flest mennesker kender John. (Danish)
 most people know John
 ‘Most people know John.’
 b. # More than half of people know John. (Majority reading)
 c. More people know John than anyone else. (Relative reading)
 d. **De** fleste mennesker kender John.
 the most people know John
 e. More than half of people know John. (Majority reading)
 f. #More people know John than anyone else. (Relative reading)

In sum, while there is some ill-understood cross-linguistic variation in this domain, what is important for our purposes is that affixal article languages behave like languages without articles when the article is dropped in that they do not allow the majority reading of *most*. This also indicates that the DP layer may be missing in these languages when the article is dropped.

2.3.2.2. *Adjunct extraction*

Article-drop is also relevant for certain extraction possibilities from TNP. In particular, regarding extraction of adjuncts out of TNPs, Bošković (2008a, 2012) establishes the generalization in (44) (see also Stjepanović 1998).

- (44) Only languages without articles may allow adjunct extraction out of TNPs.
(Bošković 2012: 184)

This is a one-way correlation, stating that adjunct extraction is possible only in languages without articles, as illustrated by example (45) from BCS (see Bošković 2012 for additional languages), although such extraction can be blocked in some languages without articles as well.

- (45) [Iz kojeg grada]_i si upoznao [NP djevojke t_i]? (BCS)
from which city are met girls

The data from Stjepanović's and Bošković's work in (46) illustrate that adjunct extraction is not possible in Bulgarian. Bošković (2012) notes that Romanian and Icelandic also disallow such extraction.

- (46) *[Ot koj grad]_i Petko sreštna [DP momičeta t_i]? (Bulgarian)
from which city Petko met girls
(Stjepanović 1998; Bošković 2012: 184)

(47) a. *Ot koj universitet sreštna-ha nyakolko-**to** studenti t ? (Bulgarian)
 from which university met-they several-the students
 'From which university did they meet several students t ?'
 b. Ot koj universitet sreštna-ha nyakolko studenti t ?
 from which university met-they several students
 'From which university did they meet several students?'
 c. *Ot koj universitet sreštna-ha nejni-**te** studenti t ?
 From which university met-they her-the students
 'From which university did they meet her students?'
 d. Ot koj universitet sreštna-ha nejni studenti t ?
 from which university met-they her students
 'From which university did they meet her students?'

(Dubinsky and Tasseva-Kuktchieva 2014)

(48) a. [Za Tsezar]_i li [negovi knigi t_i] pomognaxa na studentite da naučat istorija?
about Caesar Q his books helped to students.the to learn history
'Is it about Caesar that the his books helped the students learn history?'

56

- b. *[Za Tsezar]_i li [negovi-**te** knigi t_i] pomognaxa na studentite da naučat istorija?
 about Caesar Q his-the books helped to students.the to learn history
 ‘Is it about Caesar that the his books helped the students learn history?’
- c. *About which emperor did [several/his books __] help the students learn history?

This indicates that in the contexts in question, the DP layer is not present in the absence of articles, as also argued by Dubinsky and Tasseva-Kurktchieva (2014).²⁹

2.3.2.3. *Exhaustivity presupposition*

Another property that depends on whether the article is dropped or not in Bulgarian is the interpretation of TNPs with possessives. Regarding sentences like (49), Partee (2006) observes a difference between English and Mandarin possessives. The English example (49a) has a

²⁹ Icelandic can use or drop the article with a possessive, but adjunct extraction is blocked in both cases:

- (i) a. * [Frá hvaða háskóla]_i hittu þau nemendurna hennar t_i?
 from which university met they students.the her
 cf. Þau hittu nemendurna hennar frá UConn.
 they met students.the her from UConn.
- b. * [Frá hvaða háskóla]_i hittu þau nemendur hennar?
 from which university met they students her
 cf. Þau hittu nemendur hennar frá UConn.
 they met students her from UConn.

However, it is preferable to omit the article with the quantifier ‘several’, and there seems to be some improvement for PP-adjunct extraction when the article is dropped (Using the article with ‘several’ is ungrammatical unless the reading is partitive “several of the X”, and even in that context using the definite article is fairly marginal (Gísli Rúnar Harðarson p.c.)).

- (ii) *? [Frá hvaða háskóla] hittu þau nokkra nemendur?
 from what university met they several students

Note that Icelandic is a P-stranding language, where Pied-piping of the preposition with the moving NP is in general worse than stranding the preposition. As Bošković (2012) notes, languages differ with respect to which items induce a Specificity Effect. In particular, while possessives block extraction out of DPs in English, such items do not block extraction in languages like BCS. It could be the case that Icelandic possessives pattern with English in this respect.

presupposition that Zhangsan has exactly three sweaters (exhaustivity presupposition), while the Mandarin example (49b) does not have such a presupposition.³⁰

- (49) a. Zhangsan's three sweaters (English)
 b. Zhangsan de [san jian maoxianyi] (Mandarin Chinese)
 Zhangsan DEposs three.CL sweater
 'Zhangsan's three sweaters.'
 (Partee 2006)

Based on observations from a number of languages, Bošković (2012) notes that this split is another property distinguishing languages with and without articles, establishing (50).

- (50) Possessors may induce an exhaustivity presupposition only in DP languages.
 (Bošković 2012: 195)

Bošković ties this absence of an exhaustivity presupposition in Mandarin to the lack of the DP layer in the nominal domain, following Lyons (1999), who argues that the DP projection contributes the presupposition of uniqueness/exhaustivity. Now, in the context with possessors, the article is optionally present in Bulgarian (51a-b), as observed by Dubinsky and Tasseva-Kurkchieva (2014). Importantly, (51a), where the article is dropped, patterns with Mandarin (49b) and BCS (51d) and does not have an exhaustivity presupposition. In contrast, (51b), where the article is not dropped, patterns with English and has an exhaustivity presupposition.

- (51) a. Negovi tri pulovera sa na legloto. (no exhaustivity) (Bulgarian)
 his three sweaters are on bed.the

³⁰ Note that we are dealing here with a soft presupposition, which can be cancelled in appropriate contexts (see Partee 2006). See also Partee (2006) and Bošković (2012) for discussion of partitive readings, which are put aside here.

- b. Negovi-**te** tri pulovera sa na legloto (exhaustivity)
 his.the three sweaters are on bed.the
- c. His three sweaters. (exhaustivity) (English)
 (Dubinsky and Tasseva-Kurktchieva 2014)
- d. Njegova tri džempera su na krevetu. (BCS)
 his three sweaters are on bed
 ‘His three sweaters are on the bed.’

Icelandic possessors do not induce exhaustivity presupposition on their own either, as illustrated by the sentences in (52a-b) that do not have an article. Interestingly, when the so-called proprial article is present as in (52c), the sentence can still be interpreted without exhaustivity presupposition, which could be taken to indicate that the proprial article is not a real article.³¹

- (52) a. ??Jóns þrjár peysur eru á borðinu. (no exhaustivity)
 Jón.gen three sweaters are on table.the
- b. Þrjár peysur Jóns eru á borðinu. (no exhaustivity)
 three sweaters Jón.gen are on table.the
- c. Peysurnar þrjár **hans** Jóns eru á borðinu. ((no) exhaustivity)
 sweaters.the three **proprial.article** Jón.gen are on table.the
 ‘John’s three sweaters/ Three sweaters of John’s are on the table.’

2.3.2.4. *Weak definites*

Further support for the possible lack of DP in certain cases in affixal article languages may come from “weak definites”, another context where the definite article in English lacks its prototypical

³¹ Spanish is interesting here because it is a non-affixal article language that behaves like English in many respects. Crucially, in Spanish a definite article can be used with possessors, or it can be dropped. It appears that in the latter case, the exhaustivity presupposition is weaker than in the former case, though still not fully absent as in Bulgarian and Icelandic. What could be at work here is that omitting the definite article in Bulgarian and Icelandic necessarily means that the DP layer is missing in these constructions, while in Spanish the DP layer may still be present.

interpretation that involves uniqueness or familiarity presupposition (Aguilar-Guevara 2014). Aguilar-Guevara (2014) notes that the set of nouns that can occur as weak definites is restricted to a few classes and some isolated cases, and that only certain verbs taking such phrases as complements give rise to a weak definite reading. Furthermore, Scholten (2010) shows that the set of nouns that can serve as weak definites is not the same across languages. Thus, some nouns that can be weak definites in English do not function in this way in other languages. While further research is certainly needed in this domain, it appears that Icelandic, Bulgarian, and Romanian are more productive in this respect. Thus, they can omit the definite article in some contexts of this sort where the definite article is obligatory in English.³²

- (53) a. Hún fór til tannlæknis. (Icelandic)
 she went to dentist
 ‘She went to the dentist.’
- b. Ég tók rútu í skóla-nn.
 I took bus in school-the
 ‘I took the bus to school all my life.’
- c. Hann fór út í búð.
 he went out in store
 ‘He went to the store.’
- d. (Toj) slusha radio. (Bulgarian)
 (he) listens radio.
 ‘He is listening to the radio.’
- e. (Tja) otide na zəbolekar.
 (she) went to dentist
 ‘She went to the dentist.’
- f. Cjal jivot pətuvah s avtobus
 whole life traveled with bus
 ‘I travelled with the bus all of my life.’

³² I leave a more detailed cross-linguistic investigation of this issue for future research.

idea here is that affixal article languages are in a sense less of DP languages than other DP languages. The obvious connection here is that non-typical PF-manifestation of articles due to their affix/clitic status (see p. 37-38) is related to the possibility of dropping DP in some cases.

2.4. *Anaphor licensing*

2.4.1. *Reflexive possessives (Reuland 2011; Despić 2011)*

Affixal article languages also resemble languages without articles with respect to anaphor licensing (allowing reflexive possessives). Binding domains for anaphors have been analyzed in terms of phases, i.e. anaphors need to be bound in their minimal phase (Canac-Marquis 2005; Hicks 2006; Lee-Schoenfeld 2004; Quicoli 2008; Despić 2011; Zanon 2015; Bošković 2016a among others.). Crucially, it is well known that the possessive pronoun in sentences like (56) in English is ambiguous between the bound and the referential interpretation.

(54) John_i saw his_{i/j} book.

Importantly, there is no option of using a reflexive anaphor here.

(55) *John saw himself's book

However, not all languages behave like this. In particular, Marelj (2008, 2011) notes that languages like BCS differ from English in that they can use a reflexive possessive in this context (56).³⁶

- (56) Ivan je vidio svoju knjigu. (BCS)
 Ivan is seen self's.ACC book.ACC

Let us now focus on the possibility of using a reflexive possessor in this context, which is allowed in BCS, but not in English. It turns out that we are dealing with a more general difference here. Other languages with non-affixal articles pattern with English and disallow reflexive possessives, while other languages without articles pattern with BCS and allow reflexive possessives (see Marelj 2008, 2011), which suggests that reflexive possessors may be possible only in article-less languages. However, Reuland (2011) and Despić (2011, 2013) note that languages with postnominal definiteness (i.e. languages with definite article suffixes/enclitics) behave just like languages without articles in this respect. For example, while reflexive possessives are not possible in English (57a), languages like Bulgarian allow reflexive possessives as in (57b).

- (57) a. *John saw himself's book
 b. Petko vidya svojata kniga (Bulgarian)
 Petko saw self's.[+DF] book
 (Despić 2011:137)

³⁶ In fact, a pronominal possessor cannot be co-indexed with *Ivan* in (i).

(i) Ivan_i je vidio njegovu_{*i/j} knjigu.
 Ivan is seen his book
 'Ivan_i saw his_j book.'

Since DP is a phase in languages with articles and NP is a phase in languages that lack articles, as argued in the contextual approach to phases adopted here, then anaphors seem to be licensed from outside of their minimal phase in languages with affixal articles and languages without articles. Taking into consideration DP-languages with non-affixal articles and NP-languages, it seems that the requirement for anaphor licensing is the following (see below for the relevant notion of strong):

- (58) A reflexive anaphor has to be bound within the minimal phase projected by a strong functional head.

This two-way split in the availability of possessive reflexives between non-affixal article languages on the one hand, and NP-languages and affixal article languages on the other hand can be accounted for in the following way. In DP-languages, DP is a phase and a reflexive anaphor cannot be licensed outside of its minimal DP, hence the ungrammaticality of (57a). In NP-languages, there is no functional projection within the NP-phase, so the TNP does not close the binding domain for reflexives. The closest phase that contains functional structure in NP-languages is vP, which introduces the subject. This allows for the subject to bind the reflexive in the NP, as in (57b), allowing for subject oriented reflexive possessives in NP-languages.³⁷

With respect to affixal article languages, the notion from the Phase model (Chomsky 2000) that is relevant here is *Spell-Out*. As the derivation of a sentence proceeds, its parts are sent to Spell-Out in a cyclic fashion, i.e. each time a phase is created, the complement of the phase head is spelled-out, becoming inaccessible to elements in the higher phase (as formalized in Chomsky's

³⁷ For a discussion of examples like (i) in Russian that is compatible with the minimal-strong-phase approach to anaphor binding from (58), see Zanon 2015.

(i) neskol'ko/12 svoix knig

several/12 self.GEN books.GEN

(ii) svoix/svoi neskol'ko/12 knig.GEN

self.GEN/self.ACC several/12 books

(Zanon 2015: 218)

PIC). Regarding the availability of reflexive possessives in affixal article languages, Despić (2011) argues that D in these languages is a phase head, but that due to its affixal nature it is dependent on its complement for morpho-phonological purposes, i.e. the affix has to be pronounced in the same Spell-Out domain as its host, so Spell-Out of its complement is delayed until the next phase head enters the structure. If the D-complement in affixal article languages were sent to Spell-Out at the moment when the DP-phase is completed, the affix and its host would be pronounced in two separate Spell-Out domains. However, this cannot be the case given that affixal D in Icelandic is pronounced as an affix on the noun, and in Bulgarian it is pronounced as an affix on the first element within the NP (the adjective or the noun). For simplicity, we can say that D is a “weak” phase head in Icelandic and Bulgarian (delaying Spell-Out of its complement), while D is a “strong” phase head in non-affixal article languages (forcing Spell-Out of its complement). The first “strong” phase head in affixal article languages is introduced at the vP-level, when VP is spelled-out, which is also the first time when the complement of a “weak” D embedded within VP is spelled-out. Now, the affixal article and its host are both part of the same Spell-Out domain, which allows for the affix to lower and attach to the host. This delay of Spell-Out of the complement of a “weak” D extends the binding domain to vP, which is then the same as the binding domain of reflexives in NP-languages, so that the subject can bind into the DP in Bulgarian and Icelandic. This makes them parallel to NP-languages in the availability of reflexive possessives.

This brings us to the following question: if affixal D is weak, what prevents affixal article languages like Icelandic and Bulgarian from always allowing LBE even in the presence of a definite article?³⁸ More specifically, since the affixal D delays spell-out of its complement, a

³⁸ In the presence of the definite article, an additional reason for not allowing LBE could be the specificity effect, which is well known to block extraction out of DPs in some languages (though not all), but even if we put definite DPs aside, the question still remains about indefinite non-specific contexts.

moving adjective would not have to move to SpecDP first, which causes a violation in other DP languages (12b); it should thus be free to move out. I suggest that delayed spell-out combined with the timing of feature valuation is responsible for this. Following Frampton and Gutmann (2000), Pesetsky and Torrego (2007) and Bošković (2013c), I assume that D has unvalued Φ -features, just like the adjective, and that D probes both the adjective and the NP.³⁹ Agree between D and the adjective (i.e. Agree between unvalued features) results in feature sharing (Pesetsky and Torrego 2007). Thus, when the NP values features on D, it also values features on the adjective by transitivity, given the feature-sharing between D and A. Crucially, the adjective does not agree with the NP directly, and unvalued features on D and adjectives can be valued only when the head D is “activated” for Agree.

Now, Richards (2007) argues that feature valuation takes place at Transfer (i.e. transfer to the interfaces). This proposal has interesting consequences for the issue under investigation. First, to move out of DP, the adjective now need not stop in SpecDP in languages like Bulgarian (since NP is not spelled out when D enters the derivation).⁴⁰ At the point of entrance of the next phase head, the little v , the adjective needs to move to SpecvP due to the PIC.⁴¹ This step is long enough and does not violate anti-locality. At the Transfer of VP, all unvalued features within it need to be valued, which means that D can finally probe its NP complement. Importantly, Chomsky (2001) argues that traces do not participate in Agree relations, and Bošković (2013b) shows that traces are in fact not interveners for Agree. Therefore, at the Transfer of VP, the only copy of the adjective visible for feature valuation is the one in SpecvP but it is not available to D any more, so features

³⁹ On how TNP-internal concord works, see Bošković (2013c).

⁴⁰ Note that in languages with a “strong” D, the AP still must move to SpecDP, as before, which violates anti-locality.

⁴¹ I assume that the operations that a phasal head is involved in are triggered automatically at the merge of the phasal head, which is followed by Transfer.

of the adjective cannot be valued in this configuration. As a result, moving adjectives out of DP inevitably leads to a crash, even if spelling-out the complement of D is delayed. In short, even affixal article languages disallow LBE because an adjective has to be outside of its base generated position when the DP reaches Transfer to be able to extract, but it has to be inside its base generated position to be able to agree with D. If the adjective moves, it cannot get its features valued.

Recall that extraction of PP-adjuncts is disallowed in languages with articles, including affixal article languages like Bulgarian (46). This was captured under the contextual approach to phases in the same way as the absence of LBE, i.e. the interaction between anti-locality and the PIC makes it impossible for an element adjoined to NP to move out. However, if D is weak in languages like Bulgarian and elements moving out of DP in these languages do not have to pass through SpecDP, NP-adjoined elements can move out of DP without violating the PIC/anti-locality. Crucially, as discussed above, LBE is still blocked because the relevant element needs to agree with the noun and such agreement is mediated by the D head. Now, PP-adjuncts do not show any overt agreement with the noun they modify, and the question they raise is why extraction of such adjuncts is blocked in the basic cases. There are two possibilities. First, it could be the case that PP-adjuncts do undergo Agree with the noun (which is just not morphologically manifested), which would mean that PP-adjunct extraction and LBE are blocked for the same reason. Alternatively, the reason why PP-adjunct extraction is blocked could be different from LBE. Recall that Bulgarian allows PP-adjunct extraction in certain cases when the article is dropped. When the article is present, the unavailability of PP-adjunct extraction could be a definiteness effect. Recall

also that PP-adjunct extraction generalization is a one-way correlation, so there may be no deep reason why it would be blocked in these languages.⁴²

It should, however, be noted that there may be an alternative account of the possibility of anaphoric possessors in languages like Bulgarian that would not have consequences for the possibility of LBE and PP adjunct extraction. Suppose that weak functional heads in the sense discussed in this section cannot take specifiers (the also the following section). Rather, what would normally be a specifier would actually be an adjunct with such heads. The possessor would then be adjoined to DP in (57b). Assuming with Lebeaux (1988) that adjuncts can be inserted acyclically, what could be relevant here is that the possessor could then be acyclically inserted in Bulgarian after the binder enters the structure in SpecvP, which would not be an option in English. Possessors in BCS are actually also analyzed as adjuncts, in particular as adjuncts to NP (see Bošković 2005, 2012; Despić 2011, 2013 among many others, and the following section). This could then be what matters here (for discussion relevant to the adjunction analysis, see the following section).⁴³

⁴² Given the above discussion, it may not be surprising to find some Bulgarian speakers who would allow PP-adjunct extraction (more generally), but not LBE.

⁴³ Note that this analysis would have no effect on LBE and PP-modifier extraction. It is worth noting in this respect that Bošković's (2005) LBE generalization concerns extraction of APs (and AP-like elements), which are generated below DP in languages like English, it does not concern extraction of possessors. Bošković (2012), in fact, suggests that possessor extraction in English is blocked because the possessor is generated in SpecDP and 's is generated in D; hence the relevant element is not a constituent. In Hungarian, a DP language where this issue does not arise, possessor extraction is allowed.

2.4.2. Possessives binding out of TNPs

In this section I will discuss another configuration where Bulgarian patterns with BCS rather than with English with respect to binding with prenominal possessives.

Regarding prenominal possessives, Despić (2011, 2013) observes that English and BCS behave differently in that English prenominal possessives can be coreferential with an R-expression (59a) or a pronoun (59b), but BCS possessives cannot be (60a-b).⁴⁴

- (59) a. His_i father considers John_i highly intelligent. (English)
b. John_i's father considers him_i highly intelligent. (Despić 2013: 243)

- (60) a. *Jovanov_i papagaj ga_i je juče ugrizao. (BCS)
Jovan's parrot him is yesterday bitten
'Jovan_i's parrot bit him_i yesterday.'
b. *Njegov_i papagaj je juče ugrizao Jovana_i.
his parrot is yesterday bitten Jovan
'His_i parrot bit Jovan_i yesterday.' (Despić 2013: 245)

Despić (2011, 2013) argues that the difference between English and BCS in (59)-(60) follows from the difference in the amount of structure they have in the nominal domain in line with Bošković's NP/DP parameter. Particularly, English possessives originate in a functional projection below DP projected by the possessive clitic 's. Despić notes that from this position *his* or *John's* do not c-command out of the DP, which allows for coreference between the prenominal possessive and the R-expression (59a) and the pronoun in (59b) without violating Principle C or Principle B

⁴⁴ For discussion of interfering factors that need to be controlled for here (involving focus, which should not be used here, and relational nouns), see Bošković 2012. See also Cheng 2013, M. Takahashi 2011, Kang 2014, Bošković and Şener 2014, Bošković and Hsieh 2013 for the corresponding data in Japanese, Korean, Chinese and Turkish.

respectively. On the other hand, pronominal possessives in BCS are adjectives with clear adjectival morphology (see also Zlatić 1994, Bošković 2005, 2012). Thus, Despić takes BCS possessives to be NP-adjoined, like other adjectives. Furthermore, given that in BCS, there is no DP layer above NP, NP-adjoined pronominal possessives then c-command out of the NP in BCS, which is why coreference in (60a-b) is not possible.

Turning to affixal article languages, LaTerza (2016) discusses possessor binding in Bulgarian and Macedonian, the only two Slavic languages with an affixal article. Interestingly, she observes that they pattern with BCS in the relevant respect, as shown by the following examples from Bulgarian:⁴⁵

- (61) a. *Negovijat_i papagal uhapa Ivan_i včera. (BCS)
 his.the parrot bit Ivan yesterday
 ‘His_i parrot bit Ivan_i yesterday.’
 b. *Ivanovijat_i papagal nego_i uhapa včera.
 Ivan.poss.the parrot him bit yesterday
 ‘Ivan_i’s parrot bit him_i yesterday.’ (LaTerza 2016: 748)

Recall now the suggestion from the previous section that DPs projected by affixal articles do not have specifiers, which means that the possessors would adjoin to DP in Bulgarian.⁴⁶ If possessors are adjoined to DP, they c-command elements outside of the nominal domain, which would explain the lack of coreference in (61) in the same way as in BCS. As for English, it is worth noting here that there may actually be no need to assume that the English possessor is located in SpecPossP,

⁴⁵ Note that there seems to be some speaker variation. LaTerza (2016: fn13) reports that one Bulgarian speaker accepts coreference with an R-expression, but not with a pronoun. One speaker that I consulted also accepts coreference both with an R-expression and with a pronoun, so it is not completely clear that Bulgarian patterns with BCS here. I will put the data controversy aside here.

⁴⁶ Notice that in (61) there is an article on the possessor in both examples, so this is not one of the cases where Bulgarian behaves like an articleless language is due to article drop.

with DP projected above PossP, as Despić does (following Kayne 1994). Assuming that non-affixal D can have a Spec, even if the English possessor is located in SpecDP, it would not be able to bind out.⁴⁷ Notice that under this analysis, we can actually unify the different behavior of BCS and Bulgarian on one hand, and English on the other hand, regarding binding with possessors in examples like (56)/(57), involving anaphoric possessors, and examples like (59)-(61).⁴⁸

Thus, binding properties of prenominal possessors in Bulgarian can be accounted for under current assumptions even if Bulgarian has a DP in such cases. Crucially, even in such cases the DP layer differs in languages with affixal articles from the ones in languages like English (see also the Appendix for an alternative analysis).

2.5. Conclusion

One of the main goals of this chapter has been to show that affixal article languages typologically belong to a separate group of languages different from both languages with non-affixal article like English and languages without articles like BCS. I have shown that they exhibit a pattern of behavior in the nominal and the adjectival domain that is sometimes similar to DP-languages and sometimes to NP-languages, but that cannot be unified with either subgroup completely. I have also introduced a new generalization regarding extraction of adverbs out of predicative adjective phrases cross-linguistically, where such extraction may be allowed only in languages without

⁴⁷ I am not assuming here Kayne's approach, which does not differentiate specifiers and adjuncts.

⁴⁸ Regarding possessor extraction, note that possessors in Bulgarian agree with the noun, just like other adjectives. As discussed in the previous section, agreement of adjectives with the noun is mediated by D and it takes place when DP reaches Transfer. For an adjective (including a possessive adjective) to agree with the noun it has to be within the DP at that point. This requirement could then be blocking LBE (Recall, however, that possessor-extraction is not necessarily tied to the NP/DP distinction, see fn. 43).

articles and languages with affixal articles, and proposed an account of adverb extraction that unifies it with LBE.

One aspect of the proposal has to do with the amount of structure projected in the domain of N and A cross-linguistically, as well as in different domains within the same language. Crucially, I have proposed that although languages may differ in how much structure is required in the domain of N and A, these two domains are parallel in the basic cases in the amount of structure projected.

(62) *Structural Parallelism:*

- a. If a language always requires functional structure within TNP, it also always requires functional structure in TAP.
- b. If a language allows a bare NP, it also allows a bare AP.

According to (62), languages differ in whether they always require functional structure, or they allow bare projections, but can have functional structure when it is additionally motivated. Thus, there are two sources of functional structure – deep formal (syntactic) considerations, which always require functional structure above NP and AP in some languages, and interface considerations (semantics or PF manifestation), which may motivate the presence of functional structure even in languages that in principle allow bare NPs and APs.

Under this view, affixal article languages separate out from both NP-languages like BCS and DP-languages like English for two main reasons: (i) They allow bare NPs and APs and do not require functional structure in the absence of semantic requirements that impose the presence of a functional layer, or a PF manifestation of that functional layer; but (ii) this is obscured in many cases because they do have articles and they need to project DP in many cases to get them into the structure (and to get the semantics that they provide). However, in some cases functional structure

can still be missing in the domain of N in these languages, which has consequences on a number of TNP-internal phenomena.

Therefore, languages I have investigated split into three types with respect to how much structure they have to/can have in the extended projections of N and A. There are languages that have articles and that never allow bare lexical structure without a functional layer. Such languages are English, Dutch, German, Brazilian Portuguese, French, Italian, Spanish⁴⁹, Hungarian, and Cypriot Greek. They always have DP in the TNP and they also always have a functional projection in the TAP. In contrast, there are languages without articles that allow bare lexical projections, without any functional structure. Such languages (that are investigated here) are BCS, Polish, Russian, Slovenian, and Persian. Finally, there are also languages with articles that in principle allow bare lexical projections, without any functional structure. Such languages are Bulgarian, Icelandic, Romanian, Danish, Norwegian, Swedish, Arabic, and Hebrew. They have bare APs in the predicative position, and they also allow bare NPs. However, although they in principle allow bare NPs, most of the time DP is projected in these languages for non-syntactic reasons, i.e. independently of (62), which has made their NP-language behavior difficult to detect.⁵⁰

It should, however, be noted that it would also be natural that the Structural Parallelism in (62) is not only about N and A, but more general, i.e. it may be worth exploring if it is possible to abandon the TNP-centric view in (62), and revise it to the more general version in (63):

⁴⁹ In limited cases in Romance, bare nominals can occur as objects (e.g. Espinal and McNally 2011; Riqueros 2013 for Spanish). One possibility here is that such nominals incorporate into the verb (cf. Espinal and McNally 2011). Incorporation would satisfy the formal inadequacy that would otherwise require nominals in argument positions to have a DP (cf. Baker 1988 on N-incorporation and case). However, Riqueros (2013) shows that bare nominals can be modified by adjectives; a potential problem for an incorporation account. He also shows that bare nominals pattern with regular DPs regarding extraction possibilities, arguing they must have a functional projection (cf. fn. 33).

⁵⁰ Note that languages of this type are *not* expected to all pattern alike in when they have DP or NP (in particular contexts), i.e. in the exact degree of their DP-ness/NP-ness.

(63) *Structural Parallelism (generalized)*:

- a. If a language allows bare lexical structure without a functional layer in the domain of one lexical category, it may allow bare lexical structure in the domain of other lexical categories.
- b. If a language never allows bare lexical structure, i.e. it always requires a functional layer in the domain of one lexical category, it must have a functional layer in the domain of all lexical categories.

I leave exploring this possibility for future research.

2.6. Appendix

In this Appendix I would like to briefly suggest an alternative way of looking at two properties where affixal article languages pattern with languages that lack articles. Both properties in questions concern binding. Recall that languages without articles and affixal article languages can have reflexive possessives (Reuland 2011; Despić 2011), in contrast to languages with non-affixal articles.

- (64) a. Ivan_i je vidio svoju_i knjigu. (BCS)
 Ivan is seen self's.ACC book.ACC
 b. Petko vidya svojata kniga (Bulgarian)
 Petko saw self's.[+DF] book
 c. *John saw himself's book (English)

Recall also that Bulgarian and Macedonian behave like BCS and unlike English in disallowing coreference between their prenominal possessors and an R-expression or a pronoun outside of the TNP.

- (65) a. *Jovanov_i papagaj ga_i je juče ugrizao. (BCS) (Despić 2013: 245)
 Jovan's parrot him is yesterday bitten
 'Jovan's parrot bit him_i yesterday.'
 b. *Ivanovijat_i papagal nego_i uhapa včera. (Bulgarian) (LaTerza 2016: 748)
 Ivan.poss.the parrot him bit yesterday
 'Ivan's parrot bit him_i yesterday.'
 c. John_i's father considers him_i highly intelligent. (English) (Despić 2013: 243)

In Section 2.4, I have offered an account of the fact that Bulgarian patterns with languages like BCS rather than languages like English in these respects where Bulgarian still has a DP in the

relevant cases, but where the Bulgarian DP behaves differently from the English DP in the relevant respects due to the affixal status of Bulgarian articles. There may, however, be a simpler alternative way to unify languages like Bulgarian with languages like BCS in the relevant respect, which however has rather broad consequences that cannot be fully explored here. The alternative is that Bulgarian (and languages like Bulgarian) is in fact an NP language. Under this view, what is traditionally considered a definite article would simply be treated as a feature of the noun, not an element generated in a separate head, i.e. Bulgarian would then be missing the DP layer altogether. The binding properties of Bulgarian possessives, i.e. both (64) and (65), could then be treated in exactly the same way as in languages like BCS.

However, an NP analysis of affixal article languages would raise further questions about how to capture phenomena that seem to depend on the presence of the DP layer, e.g. disallowing LBE and adjunct extraction, or what seem to be article-dependent properties discussed in Section 2.3. At least some of these may not be insurmountable, given that, for example, the LBE and the adjunct extraction generalizations are one-way correlations, which means that the impossibility of such extraction does not necessarily tell us anything about the NP/DP status of the language.⁵¹

At any rate, while the NP analysis of Bulgarian would straightforwardly capture the cases where Bulgarian fully behaves like BCS, like the binding cases in (64) and (65), it does raise a number of additional questions that cannot be fully explored here. I therefore merely note this possibility, leaving exploring the questions it raises for future research.

⁵¹ See also Despić 2011 regarding LBE in Bulgarian.

Chapter 3 – Complements of Ns and As, accented Ps, and extraordinary extractions out of PPs*

3.1 Introduction

In the previous chapter I have argued based on a variety of syntactic and semantic phenomena that languages differ in whether they require functional structure in the extended domain of N and A, allowing bare lexical projections being a point of cross-linguistic variation. As discussed in Chapter 2, the behavior of BCS with respect to phenomena like LBE in the nominal domain and adverb extraction in the adjectival domain indicates that BCS allows both bare NPs and bare APs. In this chapter, I turn to discussing a particular type of extraction from these two domains that appears to be problematic for the system argued for in Chapter 2 (in particular, it appears to raise a problem for either the proposal that BCS has bare NPs and APs, or for the phase-based account of LBE and adverb extraction adopted in the previous chapter). In particular, recall from Chapter 2 that LBE is blocked in languages that have DP due to the interaction of the PIC and anti-locality (the problem being getting to the edge of DP), but it is allowed in languages that lack DP, since the relevant elements originate at the edge of the phase in the nominal domain in such languages. A similar account was given for the cross-linguistic variation in adverb extraction out of TAPs

* Earlier versions of some of the material in Sections 3.2 and 3.3 have been presented at *Generative Linguistics in the Old World* (GLOW) 37, *Formal Approaches to Slavic Linguistics* (FASL) 23, and *North East Linguistic Society* (NELS) 45, and an article based on some of this material has been accepted for *Natural Language and Linguistic Theory* (NLLT); earlier versions of some of the material in Section 3.4 have been presented at *Penn Linguistics Conference* (PLC) 37, *Journées LSALAA* 2013, and FASL 22, and an article on this topic appeared in *Studies in Polish Linguistics* 8 (3).

discussed in Chapter 2; in languages that project functional structure above AP, this projection blocks adverb extraction, while in those that have bare APs, this problem does not arise. As discussed in Bošković (2012), in this system predictions about the extraction of complements of lexical heads (N or A) are the reverse of what we find with LBE, i.e. languages where LBE is blocked by the presence of DP in the nominal domain and where adverb extraction is blocked by the presence of XP_{AP} in the adjectival domain should allow N-complement extraction, as well as A-complement extraction, as in the abstract structure in (1a); while languages where LBE is possible due to the absence of DP in the nominal domain and where adverb extraction is possible due to the absence of XP_{AP} in the adjectival domain should disallow N-complement extraction as well as A-complement extraction, as in (1b) (what is relevant here is Abels's (2003) generalization that complements of phasal heads cannot move).

- (1) a. \checkmark Complement_i ... [_{FP} [_{LP} L t_i]]
- b. * Complement_i ... [_{LP} L t_i]

BCS, as one of the languages that allow bare NPs and APs, is interesting in this respect since it is predicted not to allow extraction of N/A-complements. Focusing for the moment on the nominal domain, genitive complements of nouns indeed do not extract (see Zlatić 1994; Bošković 2012, 2014).

- (2) ?*[Kojeg studenta]_i si pronašla [_{NP} slike t_i]? (BCS)
 which.GEN student.GEN are found pictures.ACC
 'Of which student did you find pictures?'

However, it is not the case that all N-complements are immobile. Thus, PP complements of N can extract:

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

BCS thus has both immobile and mobile complements of N, and complements of predicative adjectives turn out to always be extractable (see Bošković 2013a).

- (4) [Na kojeg sina]_i je [AP ponosan t_i]? (BCS)
 on which son is proud
 ‘Of which son is he proud?’

In this chapter I will show that the difference between the two types of cases (immobile vs. mobile complements of N and A) lies in what kind of element heads them, where the crucial difference is that seemingly mobile N/A- complements are headed by a clitic (*Na* in (3)-(4) is a proclitic). To understand why the clitic status of the complement head matters, I first discuss the nature of cliticization in contexts involving prepositions preceding adjectives and nouns in BCS. For this purpose, I will first present a case study on accent shift from hosts to prepositions in BCS, which will allow us to look into how syntax interacts with prosody in BCS. Crucially, understanding the mechanism that allows certain extraordinary extractions of non-constituent-like units containing adjectives from BCS PPs (see (5)), which necessarily involve procliticization of prepositions, will also help us understand the cases where it appears that complements of adjectives and nouns move. The proposed analysis of such cases will be fully in line with the account of adverb extraction, LBE, and the phasal system adopted in Chapter 2.

- (5) [U veliku]_i je ušao [pp t_i kuću]. (BCS)
 in big is entered house
 ‘He entered in the big house.’

Syntax-prosody interaction will provide crucial diagnostics for the discussion in this chapter. As a result, the discussion will also result in a number of conclusions regarding syntax-prosody interaction, i.e. the discussion will go beyond simply accounting for the extraction data noted above. In this respect, following proposals in the literature about grammar constraining the influence of syntax on phonology through mapping syntactic constituents into prosodic structure (Selkirk 1978/1981, 1980, 1996; Nespor and Vogel 1986; Truckenbrodt 1999; Blumenfeld 2012; Elfner 2015; Griбанова and Blumenfeld 2015; among others), I will 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 the prosody, which is reflected in how closely a clitic can interact with the accent of the host in certain dialects of BCS. In this respect, I will 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 (6).¹ The clitic hosts in (6) both have an initial falling accent when they are not preceded by a clitic. When a clitic precedes a host like *kùću* ‘house’ (6a), it gets a rising accent, while a clitic preceding a host like *zì:d* ‘wall’ gets a falling accent (6b).²

¹ BCS prepositions in (3)-(5) are proclitics (see e.g. Zec and Inkelas 1991; Riđanović and Aljović 2009 and the discussion below).

Throughout the chapter, I will use the following diacritic marking in the examples: [´] = rising accent; [`] = falling accent. [^H] indicates that a vowel has a lexical High tone in some examples. I will also put prominent syllables in **bold** in the relevant cases.

² 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 later in this chapter (In this chapter, I only discuss the interaction of BCS proclitics (prepositions) with the accent of their host, for a discussion of contexts where BCS enclitics interact with the accent of their hosts, see Talić to appear).

- (6) *Host* *P+Host* (BCS)
- a. *kù́cu* - *zá_kúcu*
house.ACC for_house
‘a/the house’ ‘for the house’
- b. *zì:d* - *nà_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 interaction of the clitic with the accent of the host, I will explore contexts where affixes are added to hosts, illustrated by (7). 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 (7a-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 (7d-e), unlike in (6b), where a preposition preceding *zì:d* gets a falling tone.

- (7) a. *za zí:da:nje* (zí:da:nje) cf. *zà_zi:d* (BCS)
for_wall
b. **zà_zi:da:nje*
c. **zá_zi:da:nje*
for_building.ACC
‘for building’
d. *zá_zida:ra* (zìda:ra)
e. **zà_zida:ra*
for_builder.ACC
‘for the builder’

Regarding syntactic properties of the host, I will investigate the effect that syntactic complexity and mobility of the host have on the phenomenon in (6). 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 (8), where a preposition preceding a noun like *kùću* ‘house’ that is coordinated with another noun cannot surface accented (cf. (6), where *kùću* is not embedded in a syntactically complex phrase and the shift is possible).

- (8) a. **zá_kuću* i *bá:štu* (*kùću*) cf. *zá_kuću*
for_house (BCS)
 for_house.ACC and garden.ACC
- b. *za kùću* i *bá:štu*
 for house.ACC and garden.ACC
 ‘for the house and garden’

I will argue that the crucial difference between the cases in (6)-(8) 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 will 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 an intriguing 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 (9a), but not in (9b).

- (9) a. *ú_sta:ro:j* *kùći* (*stà:ro:j*) (BCS)
 in_old.LOC house.LOC
 ‘in the old house’
- b. **ú_sta:ro:j* *vèliko:j* *kùći*
 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 (9), an adjective can separate from the noun in (10a), but not in (10b).

- (10) a. Staru_i je voljela [_{NP} t_i kuću]. (BCS)
 old is loved house
 ‘She loved the old house.’
 b. *Staru_i je voljela [_{NP} t_i veliku kuću].
 old is loved big house
 ‘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 (11) (noted briefly above), involving a discontinuous PP, where the preposition and the adjective modifying the noun in the P-complement are separated from the rest of the PP (11).

- (11) [U staroj]_i je živjela [_{PP} t_i kući]. (BCS)
 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 a 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 the cases with simple nouns in (6). 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.

I will also show that the analysis proposed in this chapter for examples like (9) and (11) 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's (2013a) system) and the claim that phasal complements are immobile (see Abels 2003). 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, which supports Abels's claim that such extraction is not possible. What is crucial for our purposes in this respect is that the proposed analysis will resolve the problem that examples like (3) (repeated here in (12)), where the complement of N appears to move, raise for the system argued for in Chapter 2, which was noted in the beginning of this introduction.

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

The chapter is organized as follows. In Section 3.2, I briefly introduce basic accentual rules used in BCS as well as 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 the syntax to the prosody in Section 3.3. In Section 3.3.1, 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 3.3.2, 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 3.4, I discuss theoretical consequences of the analysis, which involve resolving a problem for Bošković's (2013a) approach to phases, in which every lexical category projects a phase in its domain, and Abels's (2003) generalization about the immobility of phasal complements. In this respect, this section will also resolve the problem noted in the outset of this chapter regarding the selective mobility of N/A complements in BCS, which appear to be expected to be completely immobile in BCS given the discussion in Chapter 2. The proposed analysis will also be extended to certain constructions in Korean and French, which superficially appear to involve non-constituent movement.

3.2 *BCS accent assignment*

Since BCS accent will be used as an important diagnostic in this chapter, in this section I give a basic overview of BCS accent and the rules that 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 (13a-b) or rising (13c-d) on both long and short vowels.

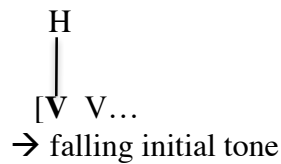
- (13)
- | | | |
|--|---|--|
| <p><i>falling</i></p> <p>a. là:rva
'larva'</p> <p>b. làne
'fawn'</p> | <p><i>rising</i></p> <p>c. lá:sta
'swallow.bird'</p> <p>d. lática
'petal'</p> | <p><i>long</i></p> <p><i>short</i></p> |
|--|---|--|

A falling tone usually occurs on initial syllables³, while a rising tone can occur on initial and medial but not on final syllables. Various analyses have been offered to capture this distribution of the two tones (see e.g. Browne and McCawley 1965; Inkelas and Zec 1988; Halle 1997; Werle 2009).

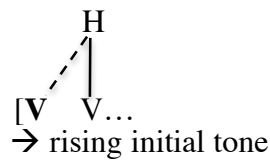
The final result of the analyses can be summarized as follows:

- (i) A *falling tone* is a result of a word-initial High tone⁴ (14a).
- (ii) A *rising tone* is a result of a non-word-initial High tone that undergoes spreading to the preceding syllable making it prominent (14b) (see e.g. Inkelas and Zec 1988).

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



b. *H on the 2nd syllable*



³ 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) *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.

⁴ 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 dissertation. 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.

Which syllable in a word bears a phonetically realized High tone in the simplest cases⁵ 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 (15a), where a toneless root *žen-* is followed by a suffix with a lexical High tone, which undergoes spreading to the root (14b). In situations where a prosodic word contains more than one lexical High tone, the leftmost one is realized (15b). In contrast, if a prosodic word has no lexical High tone, then a default High tone is inserted into the initial syllable (15c) (see e.g. Inkelas and Zec 1988).

- (15) 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.

⁵ By the “simplest cases” I refer to the 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.

3.3 *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 (2015).

3.3.1 *Accent shift to clitics with syntactically simple and complex hosts*

Prior to discussing the effect that 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 dialects⁶ a proclitic can take over the accent from the noun following it, as shown in (16)-(17), where a preposition surfaces accented before a noun (see e.g. Zec and Inkelas 1991; Riđanović and Aljović 2009). 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 (16). 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 because most BCS roots have a lexical High tone.

(16) *P+Host with initial H → Rising tone on PCL*⁷

- | | | | |
|----|--|------------|-----|
| a. | ú_sobi
in_room.LOC
'in the room' | (sòbi) | P+N |
| b. | íz_kuće:
from_house.GEN
'from/out of the house' | (kùće:) | |
| c. | préd_zgrado:m
in.front.of_building.INST
'in front of the building' | (zgràdo:m) | |

⁶ The kind of accent shift examined in this chapter has been reported in the literature on BCS accent to be found in the south of 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). Speakers of shifting dialects who have judged the data in this chapter come from central, northeast, and southern Bosnia and Herzegovina (The shifting is thus more widespread than previously assumed).

⁷ 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].

- 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 flow'

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 (17). These cases are less frequently found than those in (16), as noted by Riđanović and Aljović (2009).

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

- | | | |
|--|---------|-----|
| a. zà_ra:d
on_work.ACC
'for the article/for work' | (rà:d) | P+N |
| b. ù_gra:d
in_city.ACC
'to town' | (grà:d) | |
| c. òd_si:na
at_son.GEN
'from the son' | (sì:na) | |
| d. nìz_pu:t
down_road.ACC
'down the road' | (pù:t) | |
| e. prèd_zi:d
in.front.of_wall.ACC
'in front of the wall' | (zì:d) | |

The domain of both of these rules (spreading and insertion) in BCS is the prosodic word (see Inkelas and Zec 1988);⁸ according to Selkirk (1996), these rules apply to the syllable string containing proclitics in cases like (16) and (17) 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 the accent of its host. 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 (16) and (17), 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 (18)-(19), 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 (18), or when it is coordinated with another noun (19).

- (18) a. *?*ú*_sobi na *prí:ze:mlju* (*sòbi*) P+[NP+PP/NP]
 in_room.LOC on ground.floor.LOC

⁸ 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.

- 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
'on the bridge next to the theater'
- 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
'under the threshold of his house'
- f. pod pràg njégove: kùće
under threshold.ACC his.GEN house.GEN
'under the threshold of his house'
- (19) a. *ú_sobi i hòdni:ku (sòbi) P+[N and N]
in_room.LOC and hallway.LOC
'in the room and the hallway'
- b. u sòbi i hòdni:ku
in room.LOC and hallway.LOC
'in the room and the hallway'
- c. *òd_si:na i kcé:rke: (sì:na)
from_son.GEN and daughter.GEN
'from the son and the daughter'
- d. od sì:na i kcé: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
'for the town and the village'
- f. za grà:d i sélo
for_town.ACC and village.ACC
'for the town and the village'

In (19), if the shift takes place from the first noun, the preposition needs to be repeated in the second conjunct as well.

- (20) **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 (21a-b) or a relative clause (21c-f), accent cannot shift to the preposition.

- (21) 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**_kuću kòja: íma: plá:vu fasá:du. (kùću)
 entered are in house which has blue façade
 d. Úšli su u kùću 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 (16)-(17) and (18)-(21) follows from the way clitics are mapped from the syntax to the prosody. The mapping of clitics crucially depends on how complex

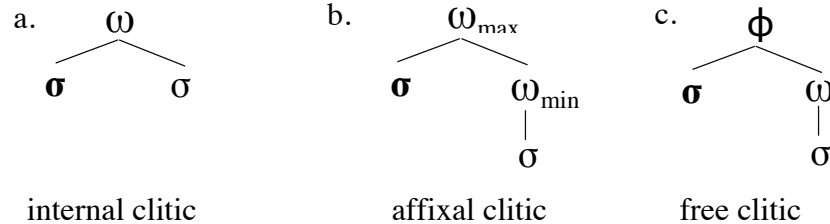
syntactic constituents surrounding them are and how those constituents map to prosody. The analysis I develop for BCS proclitics is based on proposals in Wagner (2005), Ito and Mester (2007), Selkirk (2011), and Elfner (2015), where recursive prosodic structures are permitted, which reflects the nested 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 chapter, it will be necessary to discuss what prosodic constituents correspond to syntactic heads (X^0) 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 here take place within a phrase.

Regarding the prosodic status of X^0 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.⁹ 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 (22). Closest to the host are internal clitics, which incorporate into the prosodic word of the host (22a); affixal clitics are adjoined to the prosodic word of the host, creating a recursive prosodic word

⁹ Selkirk (1996, 2011) argues that there is a distinction between lexical and functional syntactic elements in terms of how they map to prosody. 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. Since prepositions are not always treated as functional elements in the literature (see e.g., Bošković 2013a, who treats P as a lexical category), I will put aside whether functional/lexical split is correlated with clitic/non-clitic split.

with two levels, which I will label here as min(imal) and max(imal) (22b); free clitics are sisters to the prosodic word of the host and create a phonological phrase with it (22c).¹⁰

(22)



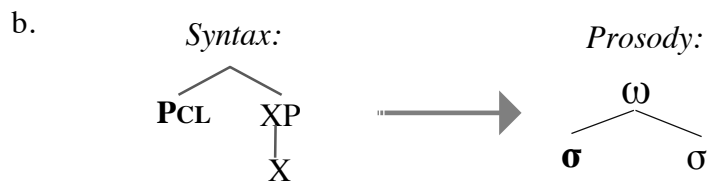
As mentioned earlier, BCS dialects differ in whether or not they allow accent shift to proclitics even with morphologically and syntactically simple hosts. For example, Selkirk considers cases where the host is a simple non-derived noun and argues that clitics map as either internal or affixal clitics in BCS dialects that allow the shift in (16)-(17). 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 (16)-(17), on the other hand, 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 (22a) is a result of Non-Recursivity (banning recursive prosodic words) and Exhaustivity (banning phonological phrases to immediately dominate syllables)¹¹ outranking syntax-prosody alignment constraints. The

¹⁰ I use standard symbols in prosodic literature to mark phonological phrase (ϕ), prosodic word (ω), and syllable (σ).

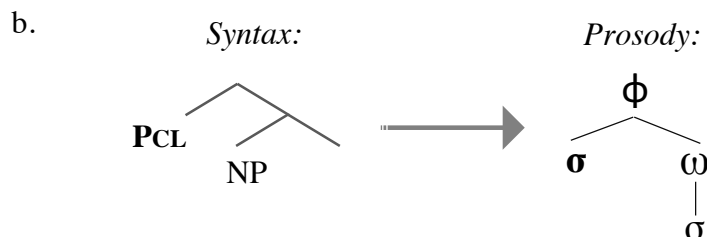
¹¹ See Selkirk (1996) for formal definitions of these constraints. For the purposes of this chapter, it suffices to know that the constraint Non-Recursivity bans prosodic structures where a prosodic category contains a prosodic constituent of the same level in the Prosodic Hierarchy (Selkirk 1978) (e.g. 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).

mapping in (22c) 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 (22) in the same dialect. 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. 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 (16)-(17) and (18)-(21), 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 output of the syntax. Crucially, the difference between shifting and non-shifting *contexts* is then the following:

- (23) 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.



- (24) a. A clitic attached to a syntactically branching¹² host is a sister to the prosodic word of the host (free clitic) and cannot interact with its accent.



¹² What is meant by a syntactically branching host in this chapter is a host that is an unambiguous phrase (XP) in the syntax, i.e. an X^0 followed by an XP, an XP followed by another XP, or a coordinated structure (&P).

To see why proclitics do not map the same way in the context in (23) and in (24), 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 (25), based on the constraint Match-Phrase proposed by Selkirk (2011).

- (25) $XP \rightarrow \phi$
 “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)

Crucially, the principle in (25) yields the default mapping from syntactic to prosodic phrases.¹³ 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; among others). As it will be shown, phonological phrases in BCS need to satisfy the constraint in (26).

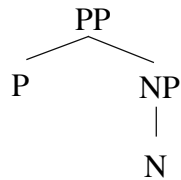
- (26) *Binary Minimum* (ϕ, ω): a ϕ constituent in the prosodic representation must dominate a minimum of two ω . (Elfner 2015: 1180)

Returning to the contrast between shifting and non-shifting contexts given in (16)-(17) and (18)-(19) respectively, the mapping principle in (25) together with the constraint in (26) predicts

¹³ Traces and empty projections are ignored by the prosodic mapping mechanism (see e.g. Nespor and Vogel 1986; Elfner 2015).

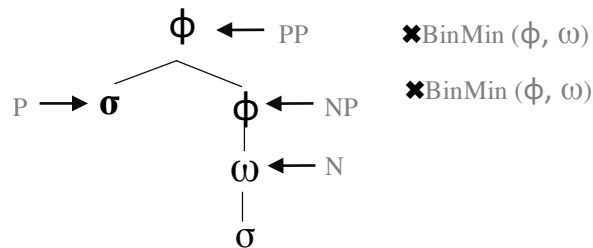
different clitic placements for the two contexts. First, let us derive the cases where a preposition takes a single noun as a complement (16)-(17), with the syntactic representation in (27).

(27) Syntactic Representation



Without considering the binary minimum constraint, the mapping principles alone would yield the following prosodic structure for (27):

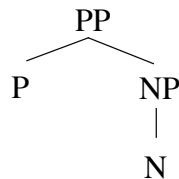
(28) Incorrect Prosodic Representation for (27)



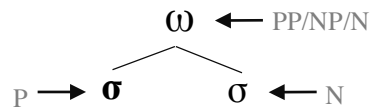
However, the structure in (28) does not satisfy the general tendency regarding the size of phonological phrases in BCS (26) at the two levels (neither the NP node, nor the PP node dominate constituents that are mapped to two prosodic words). Therefore, when each syntactic node is mapped to the prosodic structure, constraints on the size of prosodic constituents are taken into consideration. Since the NP node cannot map as a phonological phrase due to (26), the whole non-branching NP is mapped as a prosodic word. The PP also cannot map as a phonological phrase

due to (26), so 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 (29b).

(29) a. Syntactic Representation



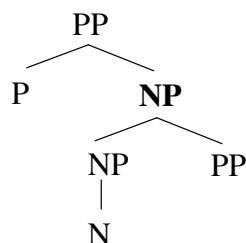
b. Prosodic Representation



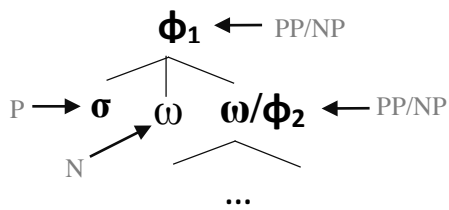
Crucially, the mapping in (29b) places the clitic and the host in the same accentual domain (prosodic word), and the clitic can interact with the accent of the host. If the host does not have a lexical High tone, the clitic gets a default High tone as the initial syllable in the prosodic word, yielding a falling tone on the proclitic (17). If the host has a High tone, the High tone spreads to the proclitic, giving it a rising tone (16).

Turning to syntactically branching NPs in (18)-(19), 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 (30a). Applying the mapping principle in (25) and the binary minimum constraint yields the prosodic representation in (30b).

(30) a. Syntactic Representation



b. Prosodic Representation



Importantly, unlike in the simple cases above, the NP complement of the preposition has to map as a phonological phrase in (30) because it dominates more than one prosodic word. Within it, the head noun is a prosodic word and the PP adjunct or a complement maps either as a prosodic word or a phonological phrase, again depending on its complexity. Finally, 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.

In the prosodic configuration in question, the proclitic is outside of the accentual domain of the noun, hence it cannot interact with its accent, which accounts for why the preposition remains unaccented when it is followed by a branching NP (18)-(21). 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 (9a)) and in some it cannot (see (9b))¹⁴. 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 3.3.2 I show that cases in which such shift is possible are instances of the mapping in (29) and cases in which a preposition cannot take over the accent from an attributive adjective are instances of the mapping in (30).

In addition to the two environments discussed in (16)-(19) above, which were noted in the previous literature, there is another environment that represents a middle case. Recall that, morphological complexity of the host also affects the accent shift in question, but unlike what

¹⁴ A number of additional examples of both types will be given in Section 3.3.2.

happens with phrasal branching of the host (18)/(19), it does not completely block the shift in all cases here.

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 (17) 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 (17) (repeated in the outlined boxes in (31)). In such cases, the preposition can only get a *rising* accent (31), which indicates that the rule of High tone spreading takes place.

- | | | |
|--|------------|---|
| (31) a. zǎ_ra:dni:ka
for_worker.ACC
'for the worker' | (rà:dnika) | cf. zà_ra:d
for_work.ACC
'for work' |
| b. *zà_ra:dni:ka
for_worker.ACC | | |
| c. zǎ_moćni:ka
for_powerful.person.ACC
'for the powerful person' | (mòćni:ka) | cf. zà_mo:ć
for_power.ACC
'for the power' |
| d. *zà_moćni:ka
for_powerful.person.ACC | | |
| e. zǎ_zida:ra
for_builder.ACC
'for the builder' | (zìda:ra) | cf. zà_zi:d
for_wall.ACC
'for the wall' |
| f. *zà_zida:ra
for_builder.ACC | | |
| g. zǎ_zuba:ra
for_dentist.ACC
'for the dentist' | (zùba:ra) | cf. zà_zu:b
for_tooth.ACC
'for the tooth' |
| h. *zà_zuba:ra
for_dentist.ACC | | |

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 (17), the High tone would be inserted to the proclitic and realized as falling accent on the proclitic. The examples in (31b,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 (22b), 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.

- (32) 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 (31) to suggest the following mapping to prosody in these cases:

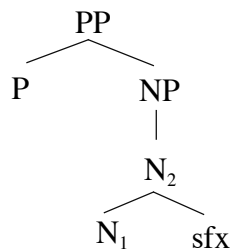
- (33) a. A clitic preceding a morphologically branching¹⁵ host adjoins to the prosodic word of the host.



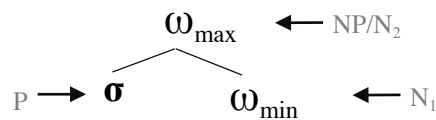
¹⁵ What is meant by a morphologically branching host is a host that is an X^0 derived from another X^0 element, i.e. it contains derivational morphology.

The PPs in (31) have syntactic representation as in (34a), 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. The mapping principle in (25) and the binary minimum constraints lead to the prosodic structure in (34b). The node N_1 maps as a prosodic word. 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 (31) 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 (17), where the clitic gets a falling accent, and the cases in (31), 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. $n\grave{u}za_zi:d$
 down_wall.ACC
 ‘down the wall’
- c. * $\grave{u}za_zida:ra$ (zìda:ra)
- d. * $uza_zida:ra$
- 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, illustrated in (36). 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. 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' cf. zà _ra:d; for_work.ACC 'for the work' cf. ù _gra:d in_city.ACC 'into the town' cf. ù _me:d in_honey.ACC 'into the honey'
b. za rá :dnju for store/action.ACC 'for the store/action'	(rá:dnju)	
c. u gráďanina in citizen.ACC 'in/at a citizen'	(gráďanina)	
d. u medénja:k in type.of.cookie.ACC 'into the cookie'	(medénja:k)	

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 (31) and (35).

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

Finally, adding derivational suffixes to nominal hosts with a lexical initial High tone as in (16) 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. zǎ_kučicu	(kùćicu)	cf. zǎ_kuču
for_house.diminutive.ACC		for_house.ACC
‘for the little house’		‘for the house’
b. ū_sobaricu	(sòbaricu)	cf. ū_sobu
in_chambermaid.ACC		in_room.ACC
‘in/at the chambermaid’		‘in(to) the room’
c. kód_štalice:	(štàlice:)	cf. kód_štale:
next.to_barn.diminutive.GEN		next.to_barn.GEN
‘next to the little barn’		‘next to the barn’

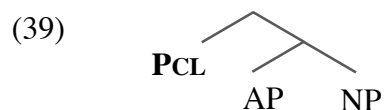
To summarize, in the BCS dialect that allows accent shift to proclitics investigated in this chapter, clitics map to prosody in three different ways. The precise prosodic category that can immediately dominate a proclitic in the prosodic structure depends on the syntactic (and as a result prosodic) context 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 the binary minimum constraint in (26) can be violated). As a result, morphological and syntactic complexity of the host has no effect on the clitic mapping or accent shift in such dialects.

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.

3.3.2 *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 mánjo:j mjèri
 e. *ú_malo mánjo:j mjèri
 f. u màlo mánjo: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 (cf. (40)).

- (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_lje:pe: bìstre: rijéke: (lje: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 kùćama (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 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. As discussed in Chapter 2, BCS allows LBE of attributive adjectives (44a). Bošković (2005) notes that such extraction is not possible with two descriptive adjectives modifying the same noun, as illustrated with (44b-c).¹⁶ 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.¹⁷

- (44) a. Staru_i je voljela t_i kuću.
 old is loved house
 ‘She loved the old house.’
- 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.
 this is loved big house
 ‘She loved this big house.’

¹⁶ More precisely, it is not possible when none of the adjectives is a *wh*-element or focused; see Bošković (2005) on why this matters.

¹⁷ As discussed in Chapter 2, demonstratives and some quantifiers are morphologically and syntactically adjectives in BCS (see Zlatić 1997; Bošković 2005, 2013a; and Despić 2011). I will therefore refer to them as adjectives in the text.

- 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, 2013a; Bošković and Šener 2014; among others, and the discussion in Chapter 2), it is possible to move the 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:niih)
 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:, trì:, pè:t)
 came is in two/three/five
 ‘He came at five o’clock’
 b. *Stigli su zà_pe:t dá:na.*
 arrived are for_five days
 ‘They arrived in five days.’

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

- (47) *Pet_i sam čekao t_i dana.*
 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:

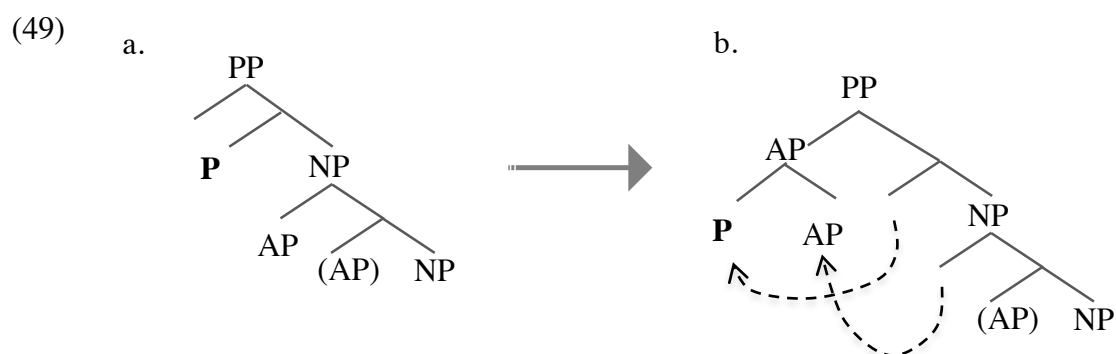
- (48) A proclitic can take over the accent from an adjective if and only if the adjective can be separated from the noun it modifies (i.e. if it can undergo LBE).

The generalization in (48) which states 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. (16)-(17)). This means that it maps to prosody as an internal clitic (23) 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. (18)/(19)). In this case the preposition maps as a free clitic as in (24)/(30), 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 (23) and (24) 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 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 the accent shift does not occur.

Crucially, what matters for the split between the two types of contexts is the mobility of the host which is captured by the correlation in (48). The preposition precedes an adjective that can be left-branch extracted away 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.^{18 19}



Following standard assumptions about c-command, where segments do not confine the c-command domain (see also Kayne 1994), 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 the 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 (23), 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

¹⁸ Similar analyses where a 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), Bošković (2017). 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).

¹⁹ The relevant movement appears to violate anti-locality. I will discuss the issue in Section 3.4.1, putting it aside for the moment.

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 (24), i.e. it cannot enter the prosodic word of the initial element in the branching NP, namely 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), (43), and (45). Under LBE, 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 (16)-(24) in Section 3.3.1).

The above analysis has an interesting prediction. If the preposition cliticizes onto the adjective in the syntax²⁰, 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):

²⁰ 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_i je gledala t_i studente?*]

While I leave the issue open here, the motivation for P adjunction to the element that moves over it could be Bošković’s (2016b) 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).

- (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 it²¹ (see Borsley and Jaworska 1988 for Polish; Corver 1992 and Bošković 2005 for BCS; but see also Franks and Progovac 1994; Abels 2003; Fanselow and Ćavar 2002 for alternative accounts which were discussed in Chapter 1). 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 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 izuzetno staroj]_i su živjeli [_{PP} t_i kući].
 in extremely old.LOC are lived house.LOC
 ‘They lived in an extremely old house.’

In addition to upward cliticization, Bošković (2013b) also considers syntactic downward cliticization as a possibility for these constructions. Under such an analysis, the preposition would

²¹ See Bošković (2005) for a number of parallelisms between this extraction and LBE.

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, 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 would cliticize to the highest adjective in all of these cases. However, it would then be difficult to differentiate (40)/(43)/(45) and (42). On the other hand, upward cliticization I argued for above captures the contrast, correctly predicting the grammaticality of (40), (43), and (45), and most importantly 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 (i.e. we know on independent grounds that the AP cannot move here).

3.4 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.

We have seen so far that: (a) if a preposition cliticizes to the AP in the syntax it can map to prosody as an internal clitic and interact with its accent; (b) this cliticization is possible only if the AP is able to undergo syntactic movement; (c) the cliticization takes place in an upward fashion in the syntax. Given the discussion of the parallelism between the domain of N and the domain of A, one may expect to find this kind of syntactic cliticization with nominal hosts as well, in contexts where no adjective is present.

In fact, it was shown above that the preposition does interact with the accent of the noun in examples like (52), suggesting that they are in the same prosodic word.

- (52) ú_kući (kùći)
 in_house.LOC
 ‘in the house’

We will see in the next section that if the mechanism of upward P-cliticization discussed above is involved in contexts like (52), with the NP moving to SpecPP and the P cliticizing to it in an upward fashion, on a par with the contexts with adjectival hosts, a number of problematic constructions (when it comes to movement out of nominal domains) can be accounted for in a uniform manner. In particular, I will argue that parallel to P+AP movement from SpecPP (50)/(53a), the newly created P+NP complex is also able to undergo further extraction from SpecPP, as 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}]]

In the next section I will first discuss issues that arise with extraction in the context in question, and then apply the upward P-cliticization analysis to it.

3.4.1 *(Im)mobile phasal complements*

As discussed in Chapter 2, locality domains in syntax are determined by phases, where the PIC and anti-locality play a crucial role (54), making sure that movement steps are neither too long, nor too short.

- (54) a. 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 (Chomsky 2000).
 b. A moving element has to cross at least one maximal projection (Bošković 2005).²²

The PIC requires movement to proceed via phasal edges, while anti-locality requires it to make steps that are long enough. Recall from Chapter 2 that the interaction of the two constraints can result in certain elements not being able to move out of a phase at all. Several such cases were discussed in Chapter 2. Another case relevant for the purposes of this chapter is a generalization established by Abels (2003) that complements of phasal heads do not move, as illustrated in (55) by the impossibility of IP extraction out of a CP phase.

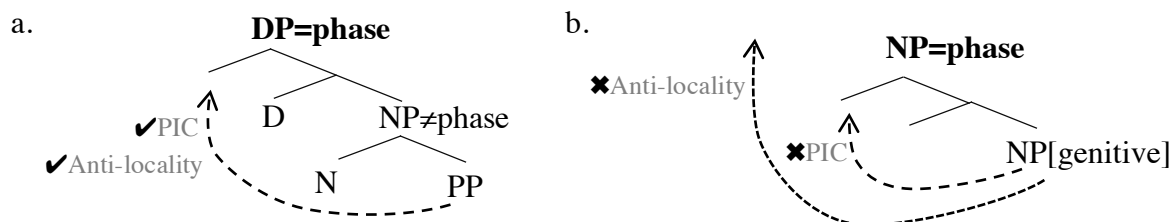
- (55) a. * $[_{CP} \text{ IP}_i \text{ } [_{C'} \text{ C } t_i]]$
 b. * $[_{IP} \text{ Anything will happen}]_i$, nobody believes $[_{CP} t_i \text{ } [_{C'} \text{ that } t_i]]$.

²² See Chapter 1 and 2 for references to other versions of anti-locality. In this dissertation, I adopt the definition in (54b).

Recall that I adopt here Bošković's (2013a) version of the contextual approach to phases, where all lexical categories (N, V, A, P) project phases, the highest phrase in the extended projection of every lexical category being a phase. Given that under this approach, the amount of structure within a domain can vary cross-linguistically as well as within a single language, as discussed in Chapter 2, phrases that are phasal complements in one context do not necessarily function as phasal complements in all contexts. Thus, given Abels's generalization and the claim that some languages require functional structure in the extended domain of N and A, we expect complements of the same lexical head to be able to extract in some languages but not in others. Bošković (2013a) illustrates this variability with a contrast between languages like English and languages like BCS.

As discussed in Chapter 2, the nominal domain in languages with articles and languages without articles is of a different size. Namely, while languages like English have a DP above NP, languages like BCS have bare NPs, which under the contextual approach to phases means that DP is a phase in English, as the highest projection in the nominal domain, but NP is a phase in BCS, where the DP layer is missing. Crucially, the interaction of the PIC and anti-locality is not expected to block N-complement extraction in English, but it is expected to block it in BCS.

(56) *N-complement extraction*



It is well-known that in English, a DP language, a nominal complement indeed can move, as illustrated in (57) with extraction of a PP complement of N (see e.g. Bach and Horn 1976; Huang

1982; Chomsky 1986; see also Bošković 2014 for additional DP languages).²³ 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 (see (56a)).

- (57) a. ?[To which problem]_i did you discover [_{DP} solutions t_i]?
 b. [Of which city]_i did you witness [_{DP} the destruction t_i]? (Huang 1982; Chomsky 1986: 80)

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 (see Bošković 2013a). Such complements cannot undergo movement, as shown in (58) (see Zlatić 1994; Bošković 2013a). 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?’

²³ For some speakers, such constructions are slightly degraded due to the preference for P-stranding.

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?’

Interestingly, 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.).²⁴

- (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.’

²⁴ 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

- 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?’

Turning now to the adjectival domain, 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, I argued in Chapter 2 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 (XP_{AP}) above AP, but BCS can have bare APs. As discussed in Chapter 2, this is supported by a contrast in the availability of intensifier extraction out of predicative adjectival phrases. Intensifying adverbs, which originate AP-adjoined, can extract in BCS (61a) but not in English (61b). In BCS, where AP is a phase, adverbs originate at the edge of the phase, and can freely move without violating the PIC or anti-locality. In contrast, AP is not the highest projection in the adjectival domain in English, so XP_{AP} 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.

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

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 (62) are possible.

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

On the surface, the extractions in (59), (60) and (62) seem to be a problem for Bošković’s approach to phases and Abels’s generalization regarding phasal complement extraction. However, 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 (63). This gives an illusion that PP moves, because the whole NP, not just its part (as with APs), moves and carries along the preposition.

- (63) $\text{P+NP} \dots [_{PP} t_p + t_{NP} [_{P'} t_p t_{NP}]]$

The current analysis thus resolves this potential problem for Bošković's approach to phases and Abels's generalization, also making N/A-complement extraction fully consistent with the system argued for in Chapter 2.

3.4.1.1. *Porous islands – Decapitated phrases cannot be phases*

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 (64a) shows that LBE cannot take place across a preposition, leaving the preposition in situ. The example (64b) shows that it is impossible to move the NP that is a complement of a preposition and strand the preposition.

- (64) a. *Staroj_i su živjeli [_{PP} u t_i kući]. /[_{PP} ū t_i kući]
 old.LOC are lived in house.LOC in house.LOC
 Intended: 'They lived in an/the *old* house.'
- b. *Staroj_i 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 movement out of the PP is allowed.

As I have argued above, the preposition cliticizes in an upward fashion to an AP or NP that moves to SpecPP. 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. I will, however, show in this section that an independent mechanism voids the anti-locality violations in these contexts.

What is crucial here is that the preposition moves and incorporates into its host in SpecPP and its lower copy gets deleted. In this respect, there is a well-known observation first reported by Ross (1969) and then by many researchers for various constructions that PF deletion can repair otherwise problematic constructions, saving derivations involving locality-of-movement violations. For instance, Ross observes that island violations can be rescued by ellipsis, as illustrated by the following examples from Merchant (2001).

- (65) a. *Ben will be mad if Abby talks to one of the teachers, but she couldn't remember [which (of the teachers)]_i Ben will be mad [if she talks to t_i].

- b. Ben will be mad if Aby talks to one of the teachers, but she couldn't remember which_i
~~Ben will be mad [if she talks to t_i].~~

(Merchant 2001: 88)

What is particularly relevant for our purposes here is that it is not only ellipsis, but also copy deletion that has been observed to void violations. Thus, Bošković (2011) argues that this is what is behind Chomsky's (1995) observation that traces do not count as interveners for relativized minimality effects, unifying the effect in question, illustrated by (66), with Ross's effect in (65): in both (65b) and (66b) the element that would normally induce a locality violation is deleted in PF.

- (66) a. *Gianni_i sembra a Maria [~~Gianni_i~~ essere stanco].
 Gianni seems to Maria Gianni to.be ill
 'Gianni seems to Maria to be ill.'
- b. A Maria_j, Gianni_i sembra ~~a Maria_j~~ [~~Gianni_i~~ essere stanco].
 to Maria Gianni seems to Maria Gianni to.be ill
 'To Maria, Gianni seems to be ill.'

Furthermore, Bošković (2005, 2011, 2013b) observes that islands for movement generally cannot be headed by a trace, as stated in (67).

- (67) Traces do not head islands.

The generalization in (67) is supported by a number of cases where movement of the head of a phase rescues locality/anti-locality violations by copy deletion of the phase head in PF (see

Bošković 2011; 2013b).²⁵ More generally, Bošković establishes a generalization that a phrase that otherwise behaves as an *island*²⁶ loses its island properties if it is headed by a trace (i.e. a copy that is deleted in PF. The generalization covers a wide variety of crosslinguistic examples involving different categories discussed in Baker (1988), Uriagereka (1988), Corver (1992), Stjepanović (2014), and Riqueros (2013) as well). One of the most striking examples that Bošković (2013b) discusses comes from Galician article incorporation, which quite generally voids island effects. To illustrate, Uriagereka (1988) observes that Galician definite DPs as in (68a)/(68c) 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 (68b)/(68d).²⁷ In such cases, extraction out of the DP is possible, so the PP with a *wh*-element can undergo movement in (68b)/(68d) (the effect is found with other islands as well, see Uriagereka 1988, 1996, and Bošković 2013b).

- (68) a. *De quén_j liches [_{DP} os mellores poemas de amigo t_j]?
 of whom read-(you) **the** best poems of friend
- b. (?)De quén_j liche-**los**_i [_{DP} [_{D'} t_i [mellores poemas de amigo t_j]]]
 of whom read-(you)-**the** best poems of friend
 ‘Who did you read the best poems of friend by?’ (Uriagereka 1996: 270-271)
- c. *e de quén_i viche [_{DP} o retrato t_i]?
 and of whom saw.you **the** portrait
- d. e de quén_j viche-**lo**_i [_{DP} t_i retrato t_j]?
 and of whom saw.you-**the** portrait
 ‘so, who have you seen the portrait of?’ (Uriagereka 1988: 81)

²⁵ 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 (see (65); for relevant discussion see also Merchant 2001; Lasnik 2001; Hornstein et al 2003, among others).

²⁶ 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.

²⁷ There is also a phonological restriction on this D-incorporation – D incorporates only into verbs that end in either /r/ or /s/, which are truncated after the incorporation (see Uriagereka 1988: 48).

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 (69a) or they can incorporate into the verb (69c). 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 (69b). However, when the P incorporates into the verb, PP ceases to be an island and extraction of the P-complement is possible as in (69d).

- (69) 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_j 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 (70). If we take *kvtsyu* ‘fish’ and *nya’t* ‘throat’ in (70) to originate in the same NP, then this is another case where extracting the head of an island voids islandhood.²⁸

²⁸ Mithun (1984) and Baker (1988) do not give a minimal pair with the counterpart of (70) without N-incorporation.

- (70) Kvtsyu 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 (2013b) argues that a derivation can be saved if merely the head of the island is removed by copy deletion.²⁹ Actually, what is going on in the Galician, Chichewa, and Mohawk examples in (68)-(70) is exactly what is going on in the BCS cases under consideration where the NP complement of P moves out of the PP, with the preposition cliticizing onto it on the way out, giving an appearance that the PP-complement moves out of the NP in (59)/(60) or the AP in (62). Crucially, as we have seen above, a locality violation is voided if the head of the relevant phase is a trace (i.e. a copy deleted in PF). Hence, in BCS the locality violation within the 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. The account of (59)/(60) and (62) can also be extended to the case of extraordinary LBE, where an attributive AP moves to SpecPP (see (50a) repeated in (71)).³⁰

- (71) U staroj_i su živjeli [_{pp} t_i kući]. (BCS)
 in_old.LOC are lived house.LOC
 'They lived in the *old* house.'

²⁹ This phenomenon holds for all islands and all types of locality-of-movement violations, including PIC/anti-locality violations (see Bošković 2013b and references therein for further data illustrations).

³⁰ A question now arises if article affixation discussed in Chapter 2 regarding languages like Bulgarian and Icelandic could void locality violations on a par with D movement in Galician. Given that the amelioration effect is found in cases where a phase head moves in the syntax, article affixation may not be expected to have that effect, since as discussed in Chapter 2, it does not involve syntactic movement but PF merger (for some relevant discussion see Bošković 2015).

3.4.2 *Inherently case-marked complements of N and A*

The above analysis can be extended to another otherwise problematic case. We have seen in Section 3.4.1 that genitive-marked N-complements cannot move if NP is the highest projection in the nominal domain (58). Genitive is the nominal structural case – the counterpart of verbal accusative. However, just like there are Vs that assign cases other than accusative, there are Ns in BCS that assign cases other than genitive, i.e. they assign lexically specified inherent cases to their complements (Bošković 2013a).

- (72) a. Pružili su otpor neprijateljima. (BCS)
put-up are resistance enemies.DAT
'They put up resistance to the enemies.'
- b. Mrzio je prijetnje zatvorom.
hated is threats prison.INSTR
'He hated threats of prison.'

Evidence that genitive assigned by nouns is a structural case, while the cases of N complements in (72) are inherent cases, comes from contexts with two case assigners targeting the same nominal. Importantly, unlike structural case, inherent case, which is lexically specified, has to be assigned (Babby 1987; Franks 1994; Bošković 2006). Thus, when two case assigners, one of which assigns inherent case and the other structural case, compete to assign their case to a single noun, we expect the inherent case to win; the structural case can fail to be assigned and the derivation can still be grammatical. On the other hand, when two inherent case assigners compete, the conflict cannot be resolved, since both inherent cases would have to be assigned; hence the derivation would crash because at least one of them would fail to be assigned. To illustrate this effect, let us consider contexts with QP-complements in BCS. Franks (1994) and Bošković (2013a) argue that genitive

assigned by BCS numerals and some quantifiers is inherent. Hence, a structural case assigning verb can take a QP complement, as in (73), where the verb *opisati* ‘describe’, which normally assigns structural accusative, fails to assign its case.

- (73) On je opisao pet knjiga. (BCS)
 he is described five book.GEN.PL
 'He described five students.'

The same holds with nouns that assign structural genitive. They can also take a QP complement (74b) (Bošković (2013a) uses numeral *tri* ‘three’ below because the genitive assigned by *tri* is different from the adnominal genitive; what we get in (74b) is the former).

- [illegible]

In contrast, inherent case assigning Ns and Vs cannot take QP-complements, since that would lead to a conflict between two inherent case assigners (the noun/the verb and the quantifier/numeral) that cannot be resolved. This is illustrated in (75), which show that the sentences are ungrammatical if either the inherent case assigned by the noun or the inherent case assigned by the numeral fails to be realized.

- (75) a. Pružili su otpor *pet neprijatelja/ *pet neprijateljima.
put.up are resistance five enemies.GEN/ five enemies.DAT
Intended: They put up resistance to five enemies.
- b. Mrzio je prijetnje *pet godina zatvora/ *pet godina zatvora.
hated is threats five years.GEN prison.GEN/ five years.INST prison.GEN
Intended: 'He hated threats of five years of prison.'

- c. Zahvalio se *pet studenata/ *pet studentima.
 thanked REFL five students.GEN/ five students.DAT
 Intended: ‘He thanked five students.’

Importantly, Zlatić (1994) and Bošković (2013a) note that nouns that assign inherent case allow complement extraction, and Bošković notes that they also allow LBE from their complement.³¹

- (76) a. Čime_i ga je [_{NP} prijetnja t_i] uplašila?
 what.INSTR him is threat scared
 ‘The threat of what scared him?’
 b. ?Kakvom_i ga je [_{NP} prijetnja [t_i smrću] uplašila?
 what-kind-of.INSTR him is threat death.INSTR scared
 ‘Of what kind of death did a threat scare him?’

Bošković (2013a) argues that Ns assigning inherent case can have more structure, which enables movement in (76) to obey the PIC, without violating anti-locality. Due to the presence of the additional projection, FP in (77), movement of NP2 or the AP that modifies it to the edge of NP1, which is required by the PIC given that the NP1 is a phase here due to the absence of DP, does not violate anti-locality.

- (77) [_{NP1} threat [_{FP} F [_{NP2} what-kind-of.INSTR [_{NP2} death.INSTR]]]]

³¹ Recall that LBE is not possible from the complement of a noun that assigns genitive, just like extraction of the genitive complement itself is disallowed (see Chapter 2 (Section 2.2.1) for the impossibility of LBE out of the complement of N that assigns genitive and Section 3.4.1 in this chapter for the impossibility of genitive complement extraction).

Regarding the nature of FP, Bošković (2013a) appeals to the frequently adopted assumption that a preposition is involved in inherent case assignment. Following this view, he suggests that F is a preposition-like element, similar to English *of*.

Adjectives can also take NP-complements, and they pattern with nouns assigning inherent case in the relevant respect: they allow complement extraction, as well as LBE from their complement.

- (78) a. On je zahvalan studentima.
 he is grateful students.DAT
 ‘He is grateful to the students.’
 b. Studentima_i je on [_{AP} zahvalan t_i]
 students.DAT is he grateful
 ‘Students, he is grateful to.’
 c. Njegovim_i je on [_{AP} zahvalan [t_i studentima]]
 his.DAT is he grateful students.DAT
 ‘He is grateful to *his* students.’

Bošković (2013a) claims that, just like the NPs in (72)-(77), APs with inherently-case marked NP complements also have more structure, which is involved in inherent case assignment.

- (79) [_{AP} grateful [_{FP} F [_{NP} his.DAT [_{NP} students.DAT]]]]

While Bošković hints that the functional head in (77) and (79) is a preposition-like element, it is not clear that he treats FP as a regular PP, which raises questions of whether this projection belongs to the extended domain of the complement of N and A in these cases, or to the domain of the higher NP in (77) and AP (79), or whether FP is a separate domain between the two lexical projections, as would be expected if it is a PP.

The first option is problematic in this system because, FP being the nominal/adjectival complement, the PIC and anti-locality are expected to block FP movement, the higher NP/AP being a phase in this system. Furthermore, movement out of the FP is also expected to be blocked in the same way. Given that FP would be the highest projection within the N/A-complement in this case and hence a phase, any element moving out of it would need to move via SpecFP. However, the interaction of the PIC and anti-locality would then incorrectly block the movements in question.

The second option, where FP would belong to the domain of the higher NP/AP, would be rather strange: functional projections in the domain of a lexical category X are normally introduced after X, i.e. they are higher than X in the structure.

What remains is the third option – that FP is a real PP (headed by a null preposition), which does not belong to either the domain of the lower or the higher NP. However, this option also does not resolve the issue that the constructions in question raise for Bošković's analysis. Since the highest projection in an extended domain (including PPs) is a phase under the contextual approach to phases adopted here, this FP will then also be a phase. The PP option will then yield the same effect as the first option, the only difference being that the lower NP will also be a phase, which is not relevant for this case.

Bošković (2013a) points out a related issue with the possibility that F is a preposition. In (76a) and (78b), the F would have to be stranded under his analysis. This is problematic because, as shown in (64), BCS otherwise does not allow P-stranding.

Crucially, in light of the mechanism behind extraordinary extractions involving prepositions argued for in this chapter, this kind of behavior of inherently case-marked complements is not surprising, in fact it is exactly what we expect to find if we fully endorse the idea that the head F

is a real preposition assigning inherent case, which happens to be null, but otherwise behaves like the Ps discussed in Section 3.4.1. Like with the PPs in examples like (62), movement out of the PP, headed by a null P, in examples like (76)/(78b-c) would have to proceed via SpecPP, PP being a phase, with the null P adjoining to the element in SpecPP, just like the P in (62) does. Examples like (76)/(78b-c) can then be accounted for in exactly the same way as (62). This would then be another case where what appears to be movement of the complement of N and A or is actually movement *out of* the complement, with the complement in question being a PP, just like in the cases discussed in Section 3.4.1. The current discussion then resolves the problem that inherently case-marked complements raise, also providing evidence for the PP status of such complements.

3.4.3 *Apparent phasal complement movement in Korean*

In this section, I turn to another case where 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 case I will discuss concerns KP complements of quantifiers 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 (see Bošković 2012; Kang 2014; Yoo 2014). Nevertheless, as discussed in Chapter 2, in the presence of certain functional elements, such as numerals, 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, 2013a; Bošković and Şener 2014; Kang 2014; among others). Specifically, Case particles have

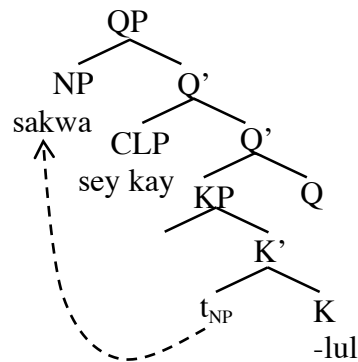
also been argued to project KP above NP in agglutinative languages like Korean and Japanese (see M. Takahashi (2011) for evidence from Japanese based on the fact that this particle can undergo movement, and can even be stranded by NP-ellipsis as the sole surviving element). Furthermore, it has been argued 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 (80) (see Bošković 2012; Kang 2014; Yoo 2014; Takahashi 2011; among others).

(80) $[_{QP} \text{sey kay } [_{KP} [_{NP} \text{sakwa}] \text{-lul}] \text{ Q}]]$
 3-CL apple -Case

In (80), 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 (80), 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 (81a) and (81b) respectively. Yoo (2014) argues that in (81a), the NP moves to SpecQP as in (82). In (81b), both the noun and the Case particle precede Num+CL (the derivation will be discussed in (83) below).

(81) a. sakwa sey-kay-**lul**
 apple 3-CL- ACC
 b. sakwa-**lul** sey-kay
 apple- ACC 3-CL

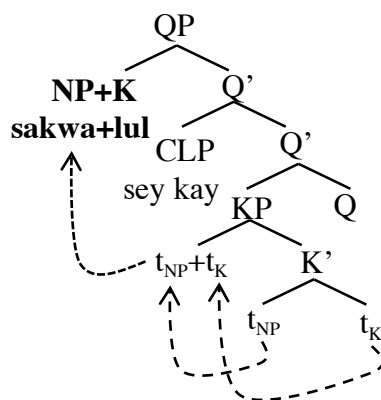
(82)



The order in (81a)/(82) 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, (81b) 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, (81b) 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 now the full derivation of (81b), given in (83).

(83)



NP first moves to SpecKP, and then K adjoins to it prior to further movement from SpecKP (83).

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)).

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

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

3.4.4 *Extraordinary COMBIEN-extraction in French*

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), among others, given in (85).

- (85) a. Tu as besoin [pp de combien de photos]?
 you have need of how-many of photos
 ‘How many photos do you need?’
 b. De combien (est-ce que) tu as besoin [pp de photos]?
 of how-many is-it that you have need of photos
 ‘How many photos do you need?’
 c. Tu as parlé [pp à combien de photographes]?
 you have talked to how-many of photographers
 ‘How many photographers have you talked to?’

- d. À combien (est-ce que) tu as parlé [_{PP} de photographes]?
 to how-many is-it that you have talked of photographers
 ‘How many photographers have you talked to?’

(Abels 2003: 175)

In these constructions, the quantifier *combien* is base generated within the complement of a preposition (85a,c). If like in BCS PPs in the context of extraordinary LBE (50)/(53), the element moving out of the complement of P stops in a position c-commanding the P here, the preposition can cliticize to it in this position. Crucially, this creates a P+*combien* constituent that can then undergo further movement, which I suggest is what happens in (85b,d).³² As with extraordinary LBE in BCS, where P+AP moves away from the NP complement of P, movement of *combien* here is possible because the head of the PP phase moves out of its base generated position. Crucially, it is not possible to strand the preposition instead of moving it along with *combien* (86a), just like prepositions in BCS have to move with the moving AP, as illustrated in (86b).

- (86) a. *[Combien de photos]_i (est-ce que) tu as besoin de t_i ?
 how-many of photos is-it that you have need of
 b. *Staroj_i su živjeli [_{PP} u t_i kući].
 old.LOC are lived in house.LOC
 Intended: ‘They lived in an/the *old* house.’

³² See Abels 2003 for an alternative analysis assuming remnant movement of the PP after the partitive moves out of the PP containing *de* or *à*, and Corver 1990 for a Government and Binding approach.

3.5 *Conclusion*

In this chapter I have discussed cases where some properties of prepositions in BCS allow for certain extraordinary extractions of elements that appear not to be constituents and out of domains that are supposed to be islands for extraction. Crucially, looking into prosodic properties of prepositions preceding adjectives and nouns in various constructions has proven to be useful in testing the syntactic structure of a variety of constructions.

The chapter has demonstrated that accent shift from hosts to prepositions in BCS depends on the morphological and syntactic complexity of the host as well as on the syntactic mobility of the host. To this end, I have investigated how BCS clitics are mapped from the syntax to the prosody in different morphological and syntactic contexts, discussing environments where it is possible or impossible for a clitic to take over the accent from the word following it. 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, i.e. it is correlated with left-branch extraction of adjectives. 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 undergo LBE 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 undergo LBE 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 have 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 to 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, thus making them compatible with the overall system argued for in Chapter 2.

In this respect, we have seen that complements of N and A in BCS, which are predicted to be immobile under the phase system adopted in Chapter 2, are only selectively immobile. Genitive complements of Ns are immobile, but non-genitive NP complements and PP complements of N and A appear to be able to undergo extraction although, as phasal complements, they are expected

to be immobile. I have argued that all the problematic cases involve PP complements of N and A (the P can be overt or null), and that what makes extraction possible in all the relevant cases is P-cliticization. As a result of P-cliticization to the moving phrase, what undergoes movement in the constructions under consideration is not the complement of N or A (i.e. it is not the PP itself), but an element that is base-generated within their complement (i.e. within the PP complement).

Chapter 4 – Attributive TAPs

4.1 *Introduction*

In this chapter I return to discussing the structure of traditional adjective phrases (TAPs) focusing now on TAPs in attributive positions. Recall that in Chapter 2, I have argued that languages split into two groups with respect to how much structure they have in the extended projection of A in the predicative position – those that allow bare APs and those that do not allow bare APs in that position. Looking at TAPs in the attributive position, there is much less variability among languages in this respect. In particular, in this chapter I will argue that all languages under investigation have attributive TAPs that have functional structure above AP, though there are two languages, namely Bosnian/Croatian/Serbian (BCS) and Icelandic, which in addition to having complex TAPs, also allow bare APs in this position (under specific conditions). Support for the presence of functional structure in attributive TAPs even in languages that in principle allow bare APs comes from adverb extraction, as well as from the morphological and prosodic properties of attributive TAPs.

The chapter is organized as follows. In Section 4.2 I discuss adverb extraction from attributive TAPs, establishing a new generalization regarding such extraction. Crucial to the discussion in Section 4.2.1 will be BCS and Icelandic, which have two distinct adjectival forms in the prenominal position. I propose an analysis of the two forms of adjectives used in the attributive position in these two languages, where the adjectival form found only in the attributive position (e.g. long form in BCS) projects TAP with more structure than the form found in both the attributive and the predicative position. In Section 4.2.2 I address a puzzle posed by Icelandic

regarding an asymmetry with respect to extraction *of* attributive TAPs and extraction *out of* attributive TAPs, which concerns the phasal status of DP in this language. In Section 4.3 I address some consequences of the proposed analysis of two adjectival forms in BCS, namely long and short form adjectives, focusing particularly on some problems they pose for claims made by Cinque (2010). Finally, I discuss additional motivation for the presence of a functional projection in TAPs with BCS long-form adjectives in Section 4.4 based on semantic, morphological, and prosodic considerations (the discussion in Section 4.2.1 being based on the syntactic considerations).

4.2 *Adverb extraction from attributive TAPs*

Regarding the amount of structure that can be projected in the extended domain of A, I have discussed only predicative TAPs in Chapter 2 and Chapter 3. Regarding predicative TAPs, we have seen that languages split into those that always require functional structure above AP in the adjectival domain and above NP in the nominal domain (languages with non-affixal articles) and languages that allow bare APs and NPs (languages without articles and languages with affixal articles). Crucially, with respect to the latter group, we have so far seen that they do not have to have bare lexical projections in the presence of additional motivation for functional structure. In this respect, I have mostly discussed phenomena in the nominal domain so far; in this chapter I focus on the adjectival domain. I will argue that even languages that allow bare APs in the predicative position have functional structure present in attributive TAPs.

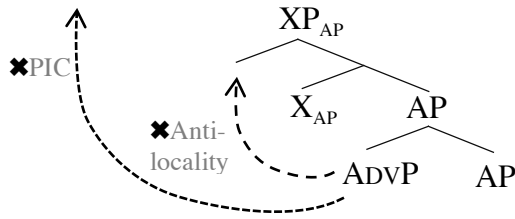
The first argument for this proposal comes from adverb extraction, which I have discussed in Chapter 2 with respect to predicative TAPs. Recall that adverb extraction out of predicative TAPs is not possible in languages that I have argued disallow bare APs (languages with non-affixal articles), as illustrated by English (1a), while languages that I have argued allow bare APs (languages without articles and languages with non-affixal articles) may allow it, as illustrated by BCS (1b).

- (1) a. *Terribly_i I am [t_i tired]. (English)
 b. Strašno_i je bila [t_i umorna]. (BCS)
 terribly is been tired.F.SF
 ‘She was terribly tired.’

I have argued in Chapter 2 that the contrast between the two types of languages regarding adverb extraction follows from the presence/absence of the functional projection in the TAP, which I have referred to as XP_{AP} . Namely, languages that have XP_{AP} above AP in predicative TAPs disallow adverb extraction, and languages that have bare APs allow adverb extraction, due to the interaction of the PIC and anti-locality. As discussed in Chapter 2, given that the highest projection in the extended domain of A is a phase, XP_{AP} is a phase when it is present. An adverb, which is generated adjoined to AP, then must move to the edge of XP_{AP} , given the PIC, which violates anti-locality (2a). The problem does not arise in bare AP languages (2b).

(2)

a.



b.



Turning to attributive TAPs, at first sight it appears that the split between the two kinds of languages captured by the generalization regarding predicative TAPs is lost in this context; that is, adverb extraction out of attributive TAPs appears to be uniformly banned. Consider examples from languages that disallow bare lexical projections (i.e. where TAPs are always XP_{AP} 's) in (3), and from languages that allow bare lexical projections (i.e. which allow bare APs in the predicative position) in (4):

(3) *Languages that disallow bare lexical projections:*

- a. *Extremely_i she has seen a [t_i tall] man. (English)
cf. She has seen an extremely tall man.
- b. *Zeer_i had ze een [t_i lange] man gezien. (Dutch)
extremely has she a tall man seen.
cf. Ze had een zeer lange man gezien.
'She has seen an extremely tall man.'
- c. *Extrem_i hat sie einen [t_i großen] Mann gesehen. (German)
extremely has she an tall man seen.
- d. *Extrem_i hat sie den [t_i großen] Mann gesehen.
extremely has she the tall man seen
cf. Sie hat einen/den extrem großen Mann gesehen
'She saw an/the extremely tall man.'
- e. *Extremamente_i ela viu um homem [t_i alto] (BP)
extremely she saw a man tall
cf. Ela viu um homem extremamente alto.
'She saw an extremely tall man.'
- f. *Extremadamente_i (ella) vio un hombre [t_i alto]. (Spanish)
extremely she saw a man tall
cf. (Ella) vio un hombre extremadamente alto.

‘She saw an extremely tall man.’

- g. *Nagyon_i vett egy [t_i szép] kabátot. (Hungarian)
 very took one nice coat
 cf. Vett egy nagyon szép kabátot.
 ‘She bought a very nice coat.’

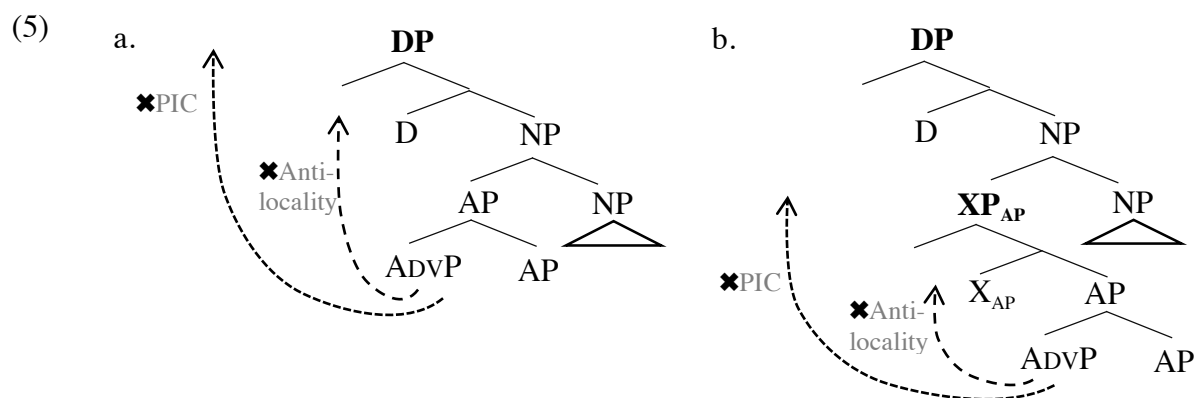
(4) *Languages that allow bare lexical projections:*

- a. *Izuzetno_i su kupili [t_i skupi] automobil. (BCS)
 extremely are bought expensive.LF car
 cf. Kupili su izuzetno skupi automobil.
 ‘They bought the extremely expensive car/one of the extremely expensive cars.’
- b. ??/*Niezwykłe_i ona widziała [t_i wysokiego] mężczyznę (Polish)
 extremely_i she saw tall man.
 cf. Ona widziała niezwykle wysokiego mężczyznę.
 ‘She saw an extremely tall man.’
- c. *Očen'_i ona uvidela [t_i vysokogo] človeka. (Russian)
 very she saw tall.LF man
 cf. Ona uvidela očēn' vysokogo človeka.
 ‘She saw a/the very tall man.’
- d. *Izjemno_i je kupila [t_i lep] plašč. (Slovenian)
 extremely is bought beautiful coat
 cf. Kupila je izjemno lep plašč.
 ‘She bought an extremely beautiful coat.’
- e. *Izklyučitelno_i tya vidya [t_i visok] čovek. (Bulgarian)
 extremely she saw tall man
 cf. Tya vidya izklyučitelno visok čovek.
 ‘She saw an extremely tall man.’
- f. *Rosalega_i keypti hún [t_i fallegu] úlpu-na. (Icelandic)
 extremely bought she beautiful.ACC.F.DEF jacket. ACC.F-the
 cf. Hún keypti rosalega fallegu úlpu.
 ‘She bought the extremely beautiful jacket.’
- g. *Foarte_i a cumpărat un [t_i căput] scump. (Romanian)
 very has bought a.M coat expensive
 cf. A cumpărat un foarte căput scump.
 ‘He bought a very expensive coat.’
- h. *Meget_i, hun købte en [t_i smuk] jakke. (Danish)
 very she bought an beautiful coat
 cf. Hun købte en meget smuk jakke.
 ‘She bought an VERY beautiful coat.’

- i. *Ekstremt kjøpte hun ei [t_i fin] jakke. (Norwegian)
 extremely bought she a beautiful coat
 cf. Hun kjøpte en ekstremt fin jakke.
 ‘She bought an extremely beautiful coat.’
- j. *Hemskt köpte hon en [t_i snygg] jacka. (Swedish)
 extremely bought she a beautiful coat
 cf. Hon köpte en hemskt snygg jacka.
 She bought an extremely beautiful coat.’

If what blocks adverb extraction out of TAPs is the presence of XP_{AP} , as I have argued for predicative TAPs in languages like English (2a), the above data seem to indicate that attributive TAPs have XP_{AP} above AP even in languages that allow bare lexical projections, which then blocks adverb extraction. Before discussing those languages further, note that English-like languages in (3), as well as the subset of affixal article languages in (4e-j), have DP in the nominal domain of the constructions under consideration. As a result, in these languages adverb extraction out of attributive TAPs may be blocked by either the functional projection in the TAP or the DP. That is, adverb extraction out of attributive TAPs in these languages is blocked regardless of whether or not they have XP_{AP} in the TAP.

Consider the structures in (5), with the relevant phases that would require the adverb to move through their specifiers given in bold. In (5a), the adverb needs to move from the AP-adjoined position to SpecDP to satisfy the PIC. However, this step of movement crosses only segments of phrases, not a whole maximal projection, hence it violates anti-locality. Thus, the presence of DP here has a blocking effect on adverb extraction. Moreover, if attributive TAPs in these languages have XP_{AP} on a par with their predicative TAPs, then XP_{AP} would also block adverb extraction in this context. In (5b), the adverb needs to move via Spec XP_{AP} because of the PIC, but this is ruled out by anti-locality.



For languages like English (3), I have argued in Chapter 2 on independent grounds that they always have functional structure in the domain N and A. Hence, I will adopt the structure in (5b) for their attributive TAPs.

When it comes to languages in (4a-d) that lack DP (see e.g. Bošković 2008a), the DP layer cannot be blocking adverb extraction out of attributive TAPs in these languages. This means that attributive TAPs even in these languages have XP_{AP} above AP, which blocks adverb extraction in examples like (4). What could the source of this additional structure be? The most obvious candidate here is the modification itself, which would mean that the modification relation requires the presence of additional structure independently of the concerns from Chapter 2. In fact, it is well known that many languages have a different form for adjectives in attributive positions, with this form typically being morphologically richer. For instance, BCS adjectives have a long and a short form (*poznati* – famous.LF.M. vs. *poznat* – famous.SF.M). The long form, which has additional morphology (see Section 4.4 for discussion), can only be used attributively (compare (6a) and (6c)).

- (6) a. poznati pjesnik (BCS)
famous.LF poet
'the/a famous poet'

- b. Mak Dizdar je poznat.
 Mak Dizdar is famous.SF
 ‘Mak Dizdar is famous.’
- c. *Mak Dizdar je poznati.
 Mak Dizdar is famous.LF

Russian also distinguishes between long and short form of adjectives (*novyj* – new.LF.M vs. *nov* – new.SF.M). While the short form never occurs attributively (7a), the long form is reserved only for this use (7b). In some cases, the long form appears to be used predicatively (7d), but it has been shown quite convincingly in the literature that such adjectives are followed by a null generic head meaning ‘man’, ‘woman’, ‘person’, or ‘entity’ (see e.g. Bailyn 1994; Babbay 2010). Therefore, the long form that seems to appear in the predicative position is actually an attributive adjective.¹

- (7) a. *Nov dom stoit na gore. (Russian)
 new.SF house.NOM stands on hill
- b. Novyj dom stoit na gore.
 new.LF house.NOM stands on hill
 ‘The new house stands on a/the hill.’
- c. Dom nov.
 house.NOM new.SF
 ‘The house is new’

¹ An argument that Bailyn (1994) provides to this effect concerns agreement in copular constructions that involve the pronoun *vy* ‘you’ as the subject, which is semantically either the second person plural pronoun or the second person formal singular pronoun (the polite form). Both usages trigger plural agreement on verbs (ia), and on short predicative adjectives (ib), i.e. *vy* is morphologically plural and triggers plural agreement here.

- (i) a. Vy igrali/*igral v futbol?
 you played.PL/played.SG at soccer
 ‘Did you [pl.]/[formal sg.] play soccer?’
- b. Vy - molody /*molod-ø /*molod-a.
 you young.SF.PL /*young.SF.M.SG /*young.SF.F.SG
 ‘You [pl.]/[formal sg.] are young.’

The long form in copular constructions can also have plural agreement, and in this case *vy* is interpreted as a plural pronoun (iia). However, when *vy* is interpreted as the second person singular formal pronoun, then the agreement on the long form is singular (iib). Bailyn (1994) takes this to indicate that long adjectives in this position do not agree with the subject *vy*, but rather with a null generic head.

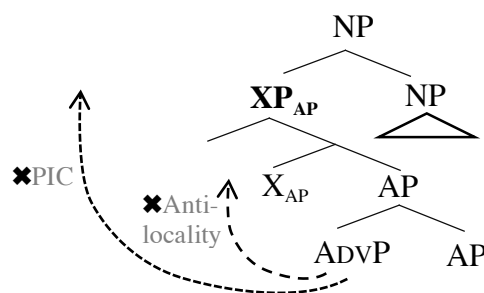
- (ii) a. Vy- molodye.
 you young.LF.PL
 ‘You [all] are young.’
- b. Vy- molodoj /molodaja
 you young.LF.M.SG /young.LF.F.SG
 ‘You [one person] are young.’

d. Dom novyj.
 house.NOM new.LF
 ‘The house is new’

(Cinque 2010:108 from Pereltsvaig 2000)

On the grounds of such differences between attributive and predicative adjectives which is often found in languages, it seems reasonable to assume that attributive adjectives have more complex structure even in languages with bare predicative TAPs. In fact, based on syntactic and semantic properties of the long/short adjective paradigm in Russian (7), following Rubin (1991), Bailyn (1994) argues that attributive TAPs quite generally must have a functional projection above the AP; that is, that such TAPs cannot be bare APs. Assuming such a projection, we can capture the fact that adverb extraction is blocked in both (3) and (4) in the same way as we did for predicative TAPs in languages like English in Chapter 2: the functional projection blocks adverb extraction, due to the conflict between the PIC and anti-locality. Even though in languages that lack DP in the nominal domain DP cannot block adverb extraction in constructions under consideration, such extraction is blocked by the functional layer of the attributive TAP.

(8)



As noted above, the existence of this additional projection in attributive TAPs in languages that in principle allow bare APs can be taken to be imposed by the modification relation. Alternatively, it can be taken to be parallel to the existence of QP within BCS TNPs and DP in Bulgarian TNPs

(see Chapter 2), languages which allow bare NPs in the absence of morphological (and semantic) motivation of additional projection in the extended domain of N (For discussion of the nature of this functional projection see Section 4.4 below). Under this view, we might expect to find bare TAPs even in the attributive position in the absence of morphology motivating it in languages that in principle allow bare APs. It turns out that this is indeed the case. Two kinds of support for this view come from the only two languages investigated here that use two different forms of adjectives in the prenominal position, namely BCS and Icelandic. First, the two prenominal forms in BCS and Icelandic behave differently with respect to adverb extraction, as I discuss in the following section. Second, semantic, morphological, and prosodic differences between BCS long and short adjectives indicate that long adjectives have more structure than short adjectives. I will discuss these differences in Section 4.4.

4.2.1 *Adnominal predicative adjectival form in BCS and Icelandic*

This section focuses on BCS and Icelandic, the only two languages investigated in this dissertation that allow two different forms of adjectives to be used in the attributive position (Recall that BCS and Icelandic in principle allow bare lexical projections). In both languages one form seems to be more complex and is used only attributively (the long form in BCS (9a) and the definite form in Icelandic (9c)), while the other form is used in the predicative position and in non-specific/indefinite TNPs (9b,d).

- | | | | | | | | |
|-----|----|------------------------------|-----------------|----|---------------------|-----------------|-------|
| (9) | a. | poznat- i
amous-LF | pjesnik
poet | b. | poznat
famous.SF | pjesnik
poet | (BCS) |
|-----|----|------------------------------|-----------------|----|---------------------|-----------------|-------|

c. góð-a	stelpa-n	d. góð	stelpa	(Icelandic)
good-DEF.FEM	girl-the	good	girl	

If the additional structure is present only in the presence of morphological motivation for it, several predictions can be made regarding the possibility of adverb extraction in the context of the two form of adjectives in these languages. In BCS, adverb extraction should be possible with predicative forms of adjectives used in the attributive position. In Icelandic, what prediction we would get depends on whether the presence of the DP layer in the nominal domain matters for adverb extraction out of attributive TAPs and whether the DP layer is present in the relevant context. If the DP layer is present and blocks adverb extraction, then such movement should never be allowed with attributive TAPs in Icelandic, regardless of what form of the adjective they have. On the other hand, if the DP layer does not matter for adverb extraction, then just like in BCS extraction should be possible with predicative forms of adjectives used in the attributive position. We have seen that both BCS and Icelandic disallow adverb extraction out of attributive TAPs with adjectives that only occur attributively (10b&d). Importantly, both of these languages allow adverb extraction even in the attributive position in the context of the adjectival form that can be used both attributively and predicatively (10a&b).

- (10) a. Izuzetno_i su kupili [t_i skup] automobil.² (BCS)
 extremely are bought expensive.SF car
 cf. Kupili su izuzetno skup automobil.
 ‘They bought an extremely expensive car.’

² There appears to be some variation among speakers regarding when an adverb can be separated from a short adjective. In particular, some speakers do not accept examples where an adverb is separated from a short adjective modifying a noun in an argumental NP, but they accept the separation from a predicative adjective discussed in Chapter 2. Note, however, that we are dealing here with a one-way correlation, so other factors, not discussed here, could be involved.

- b. *Izuzetno_i su kupili [t_i skupi] automobil.
 extremely are bought expensive.LF car
 cf. Kupili su izuzetno skupi automobil.
 ‘They bought the extremely expensive car/one of the extremely expensive cars.’
- c. Rosalega_i keypti hún [t_i fallega] úlpu. (Icelandic)
 extremely bought she beautiful.ACC.F.INDEF jacket. ACC.F
 cf. Hún keypti rosalega fallega úlpu.
 ‘She bought an extremely beautiful jacket.’
- d. *Rosalega_i keypti hún [t_i fallegu] úlpu-**na**.
 extremely bought she beautiful.ACC.F.DEF jacket. ACC.F-**the**
 cf. Hún keypti rosalega fallegu úlpu-na.
 ‘She bought the extremely beautiful jacket.’

Based on (10), as well as what we have seen earlier in (3)-(4), we reach the following generalization regarding adverb extraction out of attributive TAPs:³

(11) *Adverb Extraction Generalization (Attributive TAPs):*

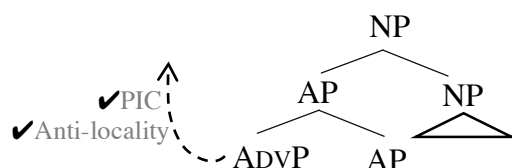
Adverb extraction out of attributive TAPs is allowed in languages without articles and languages with affixal articles only if they have separate forms of adjectives for the attributive and the predicative position and if the latter can be used in the attributive position.

Under the current analysis, languages like BCS and Icelandic have a bare AP in the predicative position, but they have an additional functional layer in attributive TAPs when it is morphologically manifested, which then blocks extraction in (10b&d). The attributive TAPs in (10a&c) have the same form of the adjectives as when these adjectives are used in the predicative position, which I have argued above involves a bare AP. It is then natural to take the attributive TAPs in question also to be bare APs. This way we can easily capture the possibility of adverb extraction out of TAPs in this context in BCS and Icelandic (I return to discussing the presence of DP in Icelandic

³ Just like the generalization about predicative TAPs (see Chapter 2), this is also a one-way correlation.

below). AP-adjoined adverbs can extract in such cases because there is no XP within the TAP (12), (and in BCS there is also no DP within the TNP), to block this movement.⁴

(12)



The facts discussed in this section and the analysis proposed here have several consequences. First, Hiraiwa (2005) makes the claim that what is at the edge of the edge of phase X is not at the edge of X for the purposes of the PIC, and therefore is not accessible for movement. Given that adverbs originate as AP-adjoined, that APs are NP-adjoined, and that NP is a phase in BCS, what (10a) demonstrates is precisely movement of the edge of the edge, hence it raises a problem for Hiraiwa's claim (See Bošković (2013c) for additional problems). Such examples show that at least some edges of this sort are able to extract.

Furthermore, Cinque (2010) claims that BCS adnominal short adjectives are reduced relative clauses. As such, TAPs with short adjectives should be islands for extraction (see Section 4.3). Thus, the availability of adverb extraction out of attributively used APs also provides evidence

⁴ Typically, if a language has two forms of adjectives one is used in the attributive position and the other one in the predicative position (e.g. Russian long form is attributive and short form is predicative (Bailyn 1994; Babby 2010), German attributive adjectives show agreement, while predicative ones do not change form (Aljović 2010). What we find in BCS and Icelandic, with two forms being used attributively is quite rare and exceptional. Under the view where the presence of a functional projection in attributive TAPs is motivated by the modification relation, we would need to assume that BCS and Icelandic predicative adjectives can be exceptionally used as modifiers without the presence of the functional projection in question, which may not be that surprising given their exceptional nature. This is not necessary under the alternative view where XP_{AP} with BCS and Icelandic attributive forms is motivated by morphological and semantic factors, which are due to the additional morphology of these forms. These factors, which are independent of the modification relation (i.e. they are not directly related to it), will be discussed in more detail in Section 4.4 for BCS.

that such TAPs are not reduced relative clauses. I return to Cinque's analysis of BCS long and short adjectives in more detail in Section 4.3.

In the following section, I address a puzzle posed by Icelandic regarding LBE and adverb extraction out of attributive TAPs.

4.2.2 *A puzzle with Icelandic attributive TAPs – LBE vs. AdvE*

As discussed in Chapter 2, Icelandic allows adverb extraction in the context of predicative TAPs, behaving like BCS-type languages in this respect. Also, just like BCS, Icelandic has an adjectival form that can occur both in the predicative and in the attributive position (the short form). Like BCS, it allows adverb extraction even from attributive TAPs with that adjectival form (10c). Icelandic also has an adjectival form that is used only attributively (the long form). Again, like BCS, it disallows adverb extraction from attributive TAPs with this form (10d). We have seen that the possibility of adverb extraction out of predicative TAPs in Icelandic (and other languages of this type) follows from the lack of the functional layer, XP_{AP} , in this position (2b), which is present in English-type languages and blocks such extraction (2a). Regarding the impossibility of adverb extraction in (10d), we have seen that even in languages that in principle allow bare APs, the functional layer is present above AP in contexts where we see its morphological manifestation. Thus, with the Icelandic long adjectives, there is an XP_{AP} present, blocking adverb extraction in such contexts. However, an issue arises regarding extraction from short form TAPs in the attributive position (10c). BCS allows adverb extraction with short adjectives used in the attributive position because it lacks both the XP_{AP} within the TAP in such cases and the DP within

the TNP, so the adverb can extract without violating the PIC or anti-locality (12). However, in Icelandic in (10c), even if the TAP lacks the functional layer, as in BCS, the question still arises why doesn't the DP block adverb extraction. We have seen that Icelandic is among the languages that in principle allow bare lexical projections, so an immediate suggestion for indefinite Icelandic TNPs might be that they just lack the DP layer (see Harðarson 2017⁵). In other words, since their indefinite article is not overt, perhaps it is just not there at all (see Thráinsson (2007), who claims that Icelandic has no indefinite article). Recall, however, that LBE is always blocked in Icelandic (13a), so one may suggest that this indicates the presence of DP in such contexts, which blocks LBE just like in English (see Chapter 2 for more details).

- (13) a. *Fallegt_i keypti hann [t_i hús]. (Icelandic)
 beautiful bought he house.INDEF
 cf. Hann keypti fallegt hús.
 ‘He bought a beautiful house.’
- b. Rosalega_i keypti hún [t_i fallega] úlpu.
 extremely bought she beautiful.ACC.F.INDEF jacket. ACC.F
 cf. Hún keypti rosalega fallega úlpu.
 ‘She bought an extremely beautiful jacket.’

However, the LBE generalization is a one-way correlation: while DP languages can never allow LBE, NP languages may or may not allow it. The impossibility of LBE in (13a) then does not necessarily indicate the presence of DP in Icelandic.

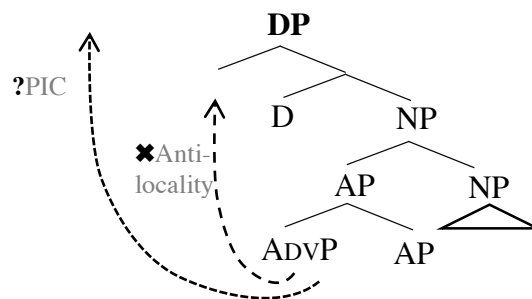
Let us, however, see if the relevant extraction patterns from Icelandic can be captured if DP is present here in Icelandic, which would capture (13a) more straightforwardly. Consider then how

⁵ While Harðarson (2017) assumes more elaborate functional structure in both indefinite and definite TNPs in Icelandic, he does argue that the DP layer is absent in indefinite TNPs, but present in definite TNPs.

the issue raised by adverb extraction out of attributive TAPs with short adjectives would be approached from this perspective.⁶

Under the contextual approach to phases, the highest projection in the extended domain of N is a phase (Bošković 2013a, 2014), so DP is a phase when present. As discussed above, the presence of DP blocks LBE. An AP moving out of a DP has to go through SpecDP, but moving from an NP-adjoined position to SpecDP violates anti-locality. However, if DP is there and if it is a phase, why doesn't it also block adverb extraction in (10c)/(13b)? An AP-adjoined adverb moving out of the DP would have to first move to SpecDP due to the PIC, just like a moving AP. This step would cross segments of two phrases, but not a full maximal projection, and would be ruled out by anti-locality as well.

(14)



One possibility here is to redefine anti-locality in a way that movement must cross more than a segment of a phrase, where crossing segments of different phrases, as in (14), would not violate anti-locality.

Another possibility, suggested by the discussion in Chapter 2, is that the possibility of adverb extraction out of an Icelandic indefinite attributive AP may have to do with the affixal nature of

⁶ The reader should, however, bear in mind that it is not out of question that DP is not present here.

its article. In particular, in Chapter 2 I have discussed an analysis of DPs in affixal article languages proposed by Despić (2011) based on binding. He argues that the spell-out of the complement of D is delayed in affixal article languages in general. I suggest that adverb extraction is possible because of this delay, but that LBE is not possible even with a delayed spell-out due to the conflicting requirements that extraction and agreement impose on the adjective. Such a conflict does not arise with adverbs because they do not agree with either the noun or the adjective.

Recall that articles in Icelandic are affixes, and as such they depend on their complement for morpho-phonological purposes, that is, the affix has to be in the same spell-out domain as its host (I assume the affix lowers in PF to attach to the host as in affix hopping/prosodic inversion analyses). Because of this, Despić (2011) proposes that spelling out the complement of D in affixal article languages is delayed until the next phase head enters the structure (see discussion regarding reflexive possessors in Chapter 2). In other words, as discussed in Chapter 2, D is a “weak” phase head in Icelandic (the spell-out of its complement is delayed), while D is a “strong” phase head in non-affixal article languages (forcing immediate spell-out of its complement). The first “strong” phase head that triggers spell-out of its complement (VP) in affixal article languages is introduced at the vP-level. At this point, the complement of a “weak” D embedded within VP is spelled-out. Let us see how the derivation of (10c) then proceeds.

The adverb in (10c) (repeated in (15) below) originates as AP-adjoined.

- (15) Rosalega_i keypti hún [t_i fallega] úlpu. (Icelandic)
 extremely bought she beautiful.ACC.F.INDEF jacket. ACC.F
 cf. Hún keypti rosalega fallega úlpu.
 ‘She bought an extremely beautiful jacket.’

Given that this TAP is headed by an adjective of the same form that is used predicatively, the functional XP that is present above AP when definite adjectival morphology is present (see (4a)/(10d)) is not projected here, just like it is absent when these APs are used predicatively.⁷ Thus, the adverb originates at the edge of the adjectival phase, and nothing blocks its extraction out of the AP in (10c)/(15). The DP does not block this adverb extraction either because spelling out the complement of D, in which the adverb is base generated, is delayed until the little *v* sends its complement, VP, to spell-out. As standardly assumed, after the little *v* enters the derivation, elements which will be moving out of *v*P first move to Spec*v*P. Then, *v* sends its complement to spell-out. As a result, the moving adverb does not have to move through SpecDP, which is what causes a violation in other DP-languages. Rather, the first step it has to make to satisfy the PIC is to move to Spec*v*P; since this step also satisfies anti-locality, this extraction is possible. Crucially, we have seen that Icelandic and Bulgarian DPs are transparent for other phenomena as well, where these two languages pattern with NP-languages rather than DP-languages (see the discussion about the availability of reflexive possessors in Chapter 2), which also suggests that affixal D is “weak”.

If a weak D does not prevent adverbs from extracting out of attributive APs, what blocks LBE in affixal article languages like Icelandic and Bulgarian? As discussed in Chapter 2, since the affixal D delays spell-out of its complement, a moving adjective would not have to move to SpecDP first. In Chapter 2, I gave an agreement-based account, and suggested that delayed spell-out combined with the timing of feature valuation is responsible for this. The crucial difference between Icelandic adjectives and intensifying adverbs is that adjectives have unvalued features that need to be valued within the DP, while adverbs have no such features. Assuming that, as

⁷ Recall that with the form of the adjective that is used only attributively in Icelandic and BCS, such projection is present and adverb extraction is blocked already within the XP_{AP} , regardless of the presence/absence of D.

discussed in Chapter 2, D, which has unvalued ϕ -features, probes both the adjective and the noun (see Bošković 2013c), and that D participates in Agree at the point when the complement of v (the next “strong” phase head) is transferred to Spell-Out (see Chapter 2 for detailed discussion), an adjective undergoing LBE would cause a crash because it would no longer be within the domain where it can get its features valued when such valuation takes place. Crucially, as argued by Chomsky (2001), traces do not participate in Agree relations, at the Transfer of VP (and DP within it that contains a trace of the moved adjective), the only copy of the adjective visible for feature valuation is the one in SpecvP. This copy, however, is not available to D any more, so features of the adjective cannot be valued in this configuration. Therefore, LBE out of DP is blocked, even if spelling-out the complement of D is delayed.⁸

Affixal article languages then disallow LBE because an adjective has to be outside of its base generated position when the DP reaches Transfer to be able to extract, but it has to be in its base generated position to be able to agree with D. If the adjective moves, it cannot get its features valued. What makes adverb extraction out of such DPs different (10c)/(15) is that adverbs have no features that need to be valued at the point when D probes. Thus, even when they move out of the AP, and out of DP, they neither violate any locality constraints, nor do they have a feature that cannot receive its value.

In the following section, I return to discussing Cinque’s analysis of BCS long and short adjectives, where they are treated as overt manifestation of direct and indirect modification that Cinque argues exists in all languages. I will point out several problems that this analysis faces.

⁸ Assuming that probing takes place at the phasal level, Bošković (2013c) argues that adjectives in BCS agree with the noun right after merger, since NP is a phase in BCS. Thus, adjectives can undergo LBE, since they do not have to check any more features with the noun later in the derivation.

4.3 *BCS long and short adjectival forms vs. Cinque's dual source of modification*

Cinque (2010) treats prenominal adjectives in languages like BCS and English either as APs in the specifiers of functional projections in the extended domain of N (direct modification) or as predicates in reduced relative clauses in the specifiers of functional projections (indirect modification), while postnominal adjectives in these languages are treated only as predicates in reduced relative clauses. In this model, the direct modification source is associated with one set of interpretations and the indirect modification source, which is analyzed as involving reduced relative clauses, with a different set of interpretations that adjectives receive. An interesting question that the proposal of the dual source analysis gives rise to is whether there are any languages that mark this distinction with overt morphology. In this respect, Cinque considers languages, among which is BCS, where adnominal modification has two distinct morphological shapes: the “long form” and the “short form”. In this work, the two forms are treated as being overt manifestations of the two sources of modification. In particular, Cinque suggests that adnominal short-form adjectives are always reduced relative clauses (indirect modification), while long-form adjectives are ambiguous between the two sources. This proposal captures some distributional and ordering restrictions these two forms of adjectives in BCS have. However, BCS adjectives also pose several challenges for this proposal. In this section, I provide several empirical arguments against the claim that BCS is a language that overtly distinguishes between the two sources of adjectival modification. Based on a close inspection of the distribution and interpretations of BCS adjectives, ordering between the two forms in the prenominal position, and extraction possibilities out of adjectival phrases, I argue that treating BCS long adjectives, as well as prenominal short adjectives, as reduced relative clauses is problematic.

4.3.1 *The Dual Modification Source Hypothesis*

Cinque (2010) proposes that adnominal adjectives have two sources based, among other things, on the interpretation of adjectives within nominal phrases. As noted above, under his view, adnominal adjectives enter the structure either as APs in the specifiers of designated functional projections (FPs) in the extended domain of N or as predicates in reduced relative clauses in the specifiers of FPs.

Regarding the interpretation of adnominal adjectives, it has been known since Bolinger (1967) that prenominal and postnominal adjectives in English differ in their interpretation. Thus, the prenominal adjective in (16a) is ambiguous and can be understood as a permanent (intrinsic) or temporary (episodic) property. (Svenonius (1994), and Larson and Marušič (2004) note that the distinction between permanent and temporary property corresponds to Carlson's (1977) individual-level/stage-level distinction). The postnominal adjective in (16b), on the other hand, is not ambiguous and can only receive the temporary property reading.⁹

(16) a. the **visible** stars (include Capella, Betelgeuse, and Sirius)

b. the stars **visible** (Bolinger 1967: 4; Larson and Marušič 2004: 274)

Bolinger (1967) also notes that prenominal and postnominal adjectives differ regarding the availability of restrictive and non-restrictive interpretation. The prenominal adjective in (17a) can

⁹ The judgments in (16)-(17) are subtle. For some speakers, having a modifier (e.g. *The stars visible tonight/with a naked eye are...*) in (16b) reinforces the temporary property reading, but the ambiguity of visible in the prenominal position is not clear. Similarly, (17b) seems to require a modifier after the adjective as well (Jonathan Bobaljik, p.c.).

be understood as either restrictive or non-restrictive, while the postnominal one in (17b) receives only a restrictive reading.

- (17) a. Every **unsuitable** word was deleted.
‘Every word was deleted; they were all unsuitable.’
‘Every word that was unsuitable was deleted.’
b. Every word **unsuitable** was deleted.
#‘Every word was deleted; they were all unsuitable.’
‘Every word that was unsuitable was deleted.’ (Larson and Marušič 2004: 275)

Further, Cinque (2010) notes that in English DPs with multiple prenominal adjectives, readings available only to prenominal adjectives (permanent; non-restrictive) and the ones available to both postnominal and prenominal adjectives (temporary; restrictive) can co-occur. In such cases, adjectives with interpretations available to both prenominal and postnominal adjectives must precede adjectives with prenominal-only readings. This is shown in (18a), where the bolded adjective is interpreted as a temporary property and the non-bolded one is interpreted as a permanent property, and in (18b), where the bolded adjective is interpreted as restrictive and the non-bolded adjective as non-restrictive.

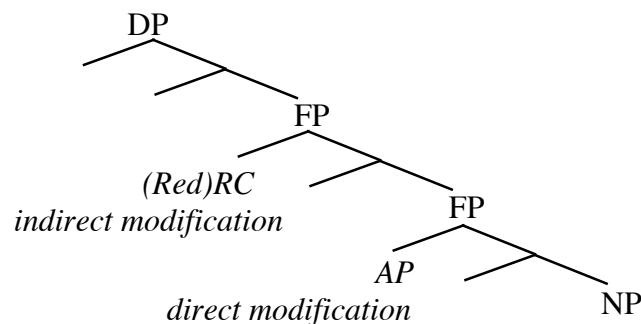
- (18) a. every **visible** visible star (temporary>permanent)
b. his **most unsuitable** unsuitable acts (restrictive>non-restrictive)
(Cinque 2010: 19; Larson 1998: 155-165)

Cinque also observes that in some languages adjectives with permanent or non-restrictive interpretations have more rigid ordering within the nominal phrase than those with temporary or

restrictive interpretation (see also Sproat and Shih 1988, 1990). However, this ordering sometimes appears to be a mere preference or just unmarked order, as is the case in English.

Cinque captures these interpretive properties of English adjectives and their order in the prenominal position by proposing a dual source analysis for adnominal modification. One source is *direct modification*, which he assumes involves merger of APs in the specifiers of functional projections in the extended domain of N. These adjectives are real attributive adjectives and receive interpretations that are not found in the postnominal position in English (permanent; non-restrictive; non-intersective, etc.). The second source is *indirect modification* (Sproat and Shih 1988, 1990), which Cinque takes to be (reduced) relative clauses merged in the specifiers of projections higher than the ones associated with direct modification, as in (19). The indirect modification adjectives receive interpretations that can occur in both prenominal and postnominal position in English (temporary; restrictive; intersective).

(19)



In short, two sources of adnominal modification in Cinque's account correlate with two distinct sets of interpretations that are available to adjectives only in particular (distinct) positions within the nominal phrase.

4.3.2 *Two Adjectival Forms in BCS*

As discussed above, BCS has “long” and “short” forms of adjectives which differ in the prosody of the adjectival stem (What is relevant here is that the long form is only used attributively (20a-b)¹⁰, while the short form typically occurs in the predicative position (20c), but it can also be used attributively (20d).

(20)	<i>Long Form</i>	<i>Short Form</i>	(BCS)
a.	poznati pjesnik famous.LF poet 'a/the famous poet'	c. Ovaj pjesnik je poznat. this poet is famous.SF 'This poet is famous.'	
b.	*Ovaj pjesnik je poznati. this poet is famous.LF	d. poznat pjesnik famous.SF poet 'a famous poet'	

Based on this distribution, Cinque (2010) argues that BCS marks the two sources of adjectival modification that he proposes through overt morphology, and proposes that the short form can only be used as a predicate; i.e. it can occur in the predicative position of the main clause (20c), or a regular relative clause (21), or a reduced relative clause where only the adjective is visible (20d). On the other hand, he claims that the long form is the morphologically different direct source of modification.

¹⁰ Examples like (20b) are acceptable only in the case of elliptical definite nominals that establish an identity relation (specificational or equative predicates). The required context where this sentence would be acceptable is the one where there are two poets established in the previous discourse, one is famous and the other one is not famous. For some BCS speakers there is a strong preference to use a demonstrative before the adjective in such contexts (see Cinque 2010: 144). Cinque (2010) also suggests these contexts involve NP-ellipsis, i.e. the long adjective is in the attributive position, but the NP it modifies is elided (see also Babby 1970, 1973, 1975; Siegel 1976a-b; Bailyn 1994 for Russian).

- (21) Upoznala sam pjesnika koji je poznat. (BCS)
 met am poet who is famous.SF
 ‘I met a poet who is famous.’

This seems to be supported by Leko’s (1988, 1992) observation that when both short and long adjectives occur in the prenominal position, the short form generally precedes the long form.¹¹

- (22) a. siromašan bolesni dječak (BCS)
 poor.SF sick.LF boy
 ‘a poor sick boy’
 b. *bolesni siromašan dječak
 sick.LF poor.SF boy

However, such treatment of BCS adnominal adjectives turns out to be problematic in a number of contexts with both long and short forms of adjectives.

4.3.3 Long Adjectives

BCS long adjectives are challenging for Cinque’s model because they receive both the interpretations associated with direct modification and the interpretations associated with reduced

¹¹ While this observation holds in most cases where short and long adjectives co-occur, Stanković (2015) notes that there is a closed set of discourse-related adjectives such as *pomenuti* ‘mentioned’ that can have a long-form adjective preceding a short-form adjective (i), which at first seems problematic for Cinque’s account.

(i) već pomenuti studiozan pregled njegovog lingvističkog opusa (BCS)
 already mentioned studious overview his linguistics work
 ‘already mentioned studious overview of his work in linguistics’ (Stanković 2015: 241)

However, the structure of such cases may involve the presence of additional projections and additional movement operations, as Stanković himself suggests, so these examples are not parallel to the long-short adjective combination in (22b), which is meant to illustrate that long adjectives cannot be base-generated before short adjectives. Thus, (22b) needs a separate account from (i).

relative clauses (i.e. indirect modification). This leads Cinque to assume that BCS long adjectives are ambiguous between direct and indirect modification. Treating long adjectives as reduced relatives, however, is problematic, as I will argue based on their distribution, interpretation, and the order between long and short adjectives in the prenominal position.

Recall that under the dual source analysis, reduced relative clauses are associated with temporary, restrictive, and intersective interpretation, while direct modification adjectives are associated with permanent, non-restrictive, and non-intersective interpretation. However, as observed by Aljović (2000:100), BCS long adjectives are ambiguous between the two types of readings. For example, the long adjective in (23a) can have either intersective or non-intersective interpretation, which is disambiguated in the situations given in (23c) and (23d) respectively. Given the context in (23b), in Situation 1 (23c) the adjective *bezbijedni* ‘safe’ in the example (23a) is interpreted intersectively; in Situation 2 (23d) the adjective *bezbijedni* ‘safe’ (23a) is interpreted non-intersectively.

- (23) a. Stigao je bezbijedni vozač. (BCS)
 arrived is safe.LF driver
 ‘The safe driver arrived.’
- b. Context: A bus station employs five drivers. Bill is the only one who drives safely, while John, Jane, James, and Jack constantly cause accidents because of unsafe driving.
- c. Situation 1: Intersective-only: There was a fire in the station. Out of all the drivers, the firefighters have so far saved only James. News reporters ask for the driver who is now safe from fire (James) to come and give a statement about the incident.
- d. Situation 2: Non-intersective-only: News reporters are covering a story on the increased number of car accidents; they called the station and asked for their safest driver to come and talk about the importance of safe driving.

In addition, under the intersective reading of *bezbijedni* ‘safe’, the sentence in (23a) entails that ‘Someone who is safe arrived’ and ‘Someone who is a driver arrived’. If we know that this person is also ‘man/worker/athlete ...’, the inference in (24) would be valid.

- (24) Stigao je bezbijedni čovjek/radnik/sportista. (BCS)
 arrived is safe man/worker/athlete
 ‘The safe man/worker/athlete arrived.’

Such inference is not valid when *bezbijedni* ‘safe’ yields a non-intersective reading, since in that case, the sentence (23a) entails that ‘Someone who is a driver arrived’, but it does not entail that ‘Someone who is safe arrived’. Being *safe* is not a general property of the individual under this reading, and it depends on the property of being a driver.¹²

Furthermore, the example in (25) from Aljović (2000) shows that BCS long adjectives can have both restrictive and non-restrictive interpretation. Under a restrictive reading, the adjective creates a subset of individuals denoted by the noun where each member has the property of being *diligent* (25b), i.e. the sentence (25) with a restrictive reading of the adjective is felicitous in a situation where a subset of our students love syntax, as in (25b). Under a non-restrictive reading, such a subset is not created (25c), i.e. the sentence (25a) with a non-restrictive reading of the adjective is felicitous only if all of our students love syntax, as in (25c).

- (25) a. Naši vrijedni studenti vole sintaksu. (BCS)
 our diligent.LF students love syntax
 b. ‘Only our students who are diligent love syntax. The lazy ones hate it.’ (*restr.*)
 c. ‘All of our students are diligent and they love syntax.’ (*non-restr.*) (Aljović 2000: 107)

¹² For relevant discussions of intersective and non-intersective interpretations, see Siegel 1976a-b; Larson 1983, 1998; Despić and Sharvit 2011; among many others.

Cinque (2010: 101) mentions this semantic ambiguity of long adjectives and concludes that they are ambiguous between the two sources of modification. That is, he assumes BCS long adjectives are either direct modification or reduced relative clauses, depending on the interpretation they have. However, if long adjectives can be reduced relative clauses, this leads to new predictions: (i) a long adjective should be able to occur in the predicative position inside or outside of relative clauses; (ii) it should be possible to base-generate a long adjective (with a reading associated with reduced relative clauses) in front of a short adjective given that the order among reduced relative clauses is assumed to be free; and (iii) a long adjective preceding a short adjective should receive a reading available only to reduced relative clauses, but a long adjective following a short adjective should be ambiguous. Regarding the first prediction, long adjectives in BCS are problematic because they are always attributive; they can never function as predicates (20a-b). Crucially, long adjectives cannot occur in regular relative clauses (26a) or in postnominal reduced relative clauses (26b).¹³

- (26) a. *Pjesnik koji je poznati je došao. (BCS)
 poet who is famous.LF is come
- b. *Pjesnik poznati po svojim sonetima je došao.
 poet famous.LF by self's sonnets is come
- c. Pjesnik poznat po svojim sonetima je došao.
 poet famous.SF by self's sonnets is come

Given that the long form cannot occur in any of the contexts for predicative adjectives (20b)/(26a-b), there is no evidence that long form adjectives can ever be predicates as they would be in a prenominal reduced relative clause. Importantly, it is not clear why the long form should be

¹³ Postnominal adjectives in English and BCS are standardly treated as reduced relative clauses (Sadler and Arnold 1994; Larson 1998; Larson and Marušić 2004; Cinque 2010). See also Section 2.2.

permitted in a prenominal reduced relative clause, but not in a postnominal reduced relative clause (26b). All of this indicates that BCS long adjectives are never reduced relative clauses.

The second prediction (that it should be possible to base generate long adjectives in front of short adjectives) is also not borne out because BCS does not allow long adjectives to be base-generated before short adjectives (22b)/(27) (see Leko 1992). The only time a long adjective is found in front of a short adjective is when it receives a discourse-linked or epistemic reading, a possibility limited to a subset of adjectives. Long adjectives in this case undergo movement to the position preceding a short adjective, rather than being base-generated there (see Stanković 2015 and fn. 11).

- (27) a. *vrijedni pametan student (BCS)
 diligent.LF smart.SF student
 Intended: ‘the diligent smart student’
 b. *lijepi kamen most
 beautiful.LF stone.SF bridge
 Intended: ‘the beautiful stone bridge’

Finally, since the order in (27) is not generally available for long adjectives (except when resulting from movement) that receive interpretations associated with reduced relative clauses, we also cannot test what interpretations long adjectives would receive in the context in (27).

Furthermore, certain adjectives in BCS (as well as English) occur exclusively in the attributive position. Under the dual source analysis, these adjectives would be expected to occur in the nominal phrase only as direct source modification, which means they would have permanent, non-restrictive, non-intersective interpretation only. In fact, in BCS, attributive-only adjectives do not even have a short form. Some such adjectives are *bivši* ‘former’, *budući* ‘future’, *pravi* ‘real’, *krivični* ‘criminal’, *mašinski* ‘mechanical’, and *električni* ‘electrical’. Given that these adjectives

never occur in the predicative position, they are not expected to occur as predicates in reduced relative clauses. As such, they should receive only the readings associated with a direct modification source (permanent; non-restrictive). However, these adjectives are also ambiguous between the two types of readings. For example, the adjective *električni* ‘electrical’ in (28a) can be interpreted either as restrictive or non-restrictive. The sentence in (28a) with a restrictive reading of the adjective is felicitous in a situation where electrical engineers are a subset of individuals who are engineers (28b); while the sentence in (28a) with a non-restrictive reading of the adjective is felicitous in a situation where all engineers are electrical engineers (28b).

- (28) a. Dao je povišice električnim inženjerima. (BCS)
 given is raises electrical.LF engineers
 ‘He gave raises to electrical engineers.’
 b. Situation 1: The firm employs electrical and mechanical engineers.
 c. Situation 2: All the engineers that the firm employs are electrical engineers.

For *električni* to receive a restrictive reading in (28a), it would need to be analyzed as a reduced relative clause under the dual source analysis. However, it would then be surprising that this adjective can otherwise never occur in a predicative position.

- (29) a. *Ovaj inženjer je električni. (BCS)
 this engineer is electrical.LF
 Intended: ‘This engineer is electrical.’
 b. *Ovaj inženjer, koji je električni, dobio je povišicu.
 this engineer which is electrical.LF got is raise
 Intended: ‘This engineer, which is electrical, got a raise.’

Similarly, English also has exclusively attributive adjectives, which also represent a challenge for the dual source analysis. Some such adjectives in English are *live*, *future*, *sole*, and *former*. These adjectives never occur as predicates in copular constructions (30b,e) or in regular relative clauses (30c,f), and are expected to be treated in terms of direct modification.¹⁴

- (30) a. our future prospects
 b. *Our prospects are future.
 c. *Our prospects that were future.
 d. a live volcano
 e. *The volcano is live.
 f. *The volcano that is live.

When a strictly attributive adjective like *live* is accompanied by another adjective in the prenominal position, we would then expect the adjective following *live* to necessarily be direct modification because direct modification adjectives are claimed to be in functional projections closer to the noun and reduced relative clauses are more peripheral. We would also expect the adjective following *live* to receive only the interpretation associated with direct modification. On the other hand, if an adjective precedes a strictly attributive adjective like *live*, it could be either a direct modification adjective or a reduced relative clause, hence it is expected to be ambiguous. However, these predictions are challenged by the interpretations of the adjective *visible* in (31). In (31a), where the adjective *visible* follows the adjective *live*, *visible* can receive either permanent or temporary property interpretation (31c-d). Assuming *live* is a direct modification adjective, the permanent property reading associated with direct modification is expected, but not the temporary

¹⁴ In the context of such adjectives, Cinque (2010: 51-52) discusses a long tradition in generative grammar to derive all adjectives from postnominal relative clauses, pointing out that such derivation is only possible with adjectives like *former* if we assume they are derived from adverbs in relative clauses, since they never function as predicates. However, based on a larger set of strictly attributive adjectives, he notes that such an analysis would be highly unconstrained and suggests that attributive-only adjectives have a direct modification source.

reading associated with reduced relative clauses. In (31b), where the adjective *visible* precedes the adjective *live*, it is much harder for *visible* to receive the permanent property interpretation (31c), while the temporary property interpretation (31d) is readily available.

- (31) a. (While combing through his hair,) He found **live** visible lice.
b. (While combing through his hair,) He found visible **live** lice.
c. ‘He found lice that are tiny but inherently visible with a naked eye.’
d. ‘He found lice that are tiny but they are visible now because he moved the hair that was covering them.’

In sum, we have seen several cases where the interpretation, distribution, and ordering of long adjectives in BCS and adjectives in English is problematic for the dual source analysis. BCS facts are especially problematic for the claim that long adjectives can be reduced relative clauses.

4.3.4 *Short Adjectives*

Turning to BCS short adjectives, they typically occur as predicates in copular constructions; in prenominal and postnominal position they are claimed to always have a reduced relative clause source. I argue below that BCS prenominal short adjectives should not be treated as reduced relative clauses based on extraction possibilities out of APs. I also show that such treatment of prenominal short adjectives is challenged in the context of exclusively predicative adjectives, as well as that short adjectives yield interpretations that are unexpected under a reduced relative clause analysis.

The first argument against treating prenominal short adjectives as reduced relative clauses comes from extraction possibilities. It is well-known that relative clauses are islands for extraction (Ross 1967), which holds both in English (32) and in BCS (33):

- (32) a. They met someone who knows Julia.
 b. *[Which girl]_i did they meet someone who knows t_i ?
 c. Phineas knows a girl who is jealous of Maxime.
 d. *Who_i does Phineas know a girl who is jealous of t_i ? (Ross 1967: 124)
- (33) a. Upoznali su nekoga ko poznaje Kosaru. (BCS)
 met are someone who knows Kosara
 ‘They met someone who knows Kosara.’
 b. *[Koji djevojku]_i su upoznali nekoga ko poznaje t_i ?
 which girl are met someone who knows

Crucially, Ross (1967) notes that even reduced relative clauses are islands, i.e. extraction out of relative clauses is not possible even when they are reduced (see also Chomsky 1986; Siloni 1997 (for French); among others):

- (34) a. *Who_i does Phineas know a girl jealous of t_i? (Ross 1967: 125)
 b. *Which children_i did John write a book (for parents) to read to t_i? (Chomsky 1986: 34)
 c. *D’où Jean est-il le dernier revenu content t_i? (Siloni 1997: 142)
 from where John is-he the last.one return happy

In this respect, the prediction of the dual source analysis of BCS adnominal adjectives is that APs with short adjectives should be islands for extraction, given that they always enter the structure as reduced relative clauses under this view. This can be tested by using adverb extraction out of APs in different configurations. As discussed in Chapter 2, BCS allows extraction of adverbs out of

predicative APs (35a). Such extraction is not possible if the predicative AP is embedded within a relative clause (35b).

- (35) a. Veoma_i je bio t_i lijep. (BCS)
 very is been beautiful.SF
 ‘It was *very* beautiful.’
 cf. Bio je veoma lijep.
- b. *Veoma_i je vidjela kaput koji je bio t_i lijep.
 very is seen coat which is been beautiful.SF
 cf. Vidjela je kaput koji je bio veoma lijep.
 ‘She saw a very beautiful coat.’

When a prenominal AP with a short adjective is embedded within a regular relative clause, adverb extraction out of the AP is also not possible (36b).

- (36) a. Vidjeli su djevojku koja je kupila [izuzetno lijep kaput]. (BCS)
 seen are girl which is bought extremely beautiful.SF coat
 ‘They saw a girl who bought an extremely beautiful coat.’
- b. *Izuzetno_i su vidjeli djevojku koja je kupila [t_i lijep kaput].
 extremely are seen girl which is bought beautiful.SF coat

Thus, regular relative clauses are islands for extraction of adverbs both from predicative APs and from prenominal APs with short adjectives. As shown in (34), reduced relative clauses are also islands for extraction. Now, if BCS prenominal and postnominal APs with short adjectives were reduced relative clauses, as the dual source analysis holds, adverb extraction would be predicted to be blocked in both of these contexts. However, prenominal and postnominal APs with short adjectives behave differently in this respect. Crucially, as we have seen before, adverb extraction out of a prenominal AP with a short adjective is possible in (37), contrary to what is predicted.

- (37) a. Izuzetno_i je kupila t_i lijep kaput. (BCS)
 extremely is bought beautiful.SF coat
 ‘She bought an *extremely* beautiful coat.’
- b. Užasno su kupili t_i ružan stan.
 terribly are bought ugly.SF apartment
 ‘They bought a *terribly* ugly apartment.’

The data in (35)-(37) show that extraction of an adverb out of an AP is possible when the AP is not base generated within an overt relative clause (35a)/(37), but it is blocked when it is clear that the adverb is embedded within a relative clause (35b)/(36b). Hence, the lack of an island effect in (37) strongly suggests that prenominal short adjectives are not reduced relative clauses.

The second argument against treating prenominal APs with short adjectives as reduced relative clauses comes from a contrast between prenominal and postnominal APs with short adjectives. Postnominal APs are also often treated as reduced relative clauses (Sadler & Arnold 1994, Larson 1998, Larson & Marušič 2004, Cinque 2010), although this claim has not been explicitly made for BCS postnominal APs (38).

- (38) a. Upoznali su roditelje izuzetno pó:nosne na svoju djecu. (BCS)
 met are parents extremely proud.PL.SF of their children.
 ‘They met parents extremely proud of their children.’
- b. Posjetili su zemlju izuzetno bógatu rijekama.
 visited are country extremely rich.PL.SF rivers.INSTR
 ‘They visited a country extremely rich in rivers.’
- c. Uslikala je lice strašno ruméno od hladnoće.
 photographed is face terribly red.SG.SF from cold
 ‘She photographed a face terribly red from cold.’

Evidence that postnominal BCS adjectives may be reduced relative clauses comes from the fact that only the short adjectival form can occur in this position. The long form, which is never allowed

in a predicative position, is excluded in the postnominal position, as illustrated with the contrasts between (38a)-(39a), (38b)-(39b), and (38c)-(39c). Crucially, it is not possible to use the long forms in (39) in the postnominal position (they differ in the length of the final vowel from their short counterparts in (38a-b), and, in addition to that, in (38c) the rising accent is on the second syllable, but in (39c) it is on the initial syllable).

- (39) a. **roditelje pó:nosne: na svoju djecu* (cf. (38a)) (BCS)
 parents proud.PL.LF of self's children
 'parents proud of their children'
- b. **zemlju bógradu: rijekama* (cf. (38b))
 country rich.PL.LF rivers.INST
 'country rich in rivers'
- c. **lice rúmeno: od hladnoće* (cf. (38c))
 face red.SG.LF from cold
 'face red from cold'

If BCS postnominal APs are reduced relative clauses, then adverb extraction out of sentences in (38) should be impossible. Interestingly, this is exactly what we find. Adverb extraction out of postnominal reduced relative clauses is disallowed.

- (40) a. **Izuzetno_i su upoznali roditelje t_i pó:nosne na svoju djecu.* (BCS)
 extremely are met parents proud.SF of self's children
- b. **Izuzetno_i su posjetili zemlju t_i bógradu rijekama.*
 extremely are visited country rich.SF rivers.INSTR
- c. **Strašno je uslikala lice crveno od hladnoće.*
 terribly is photographed face red from cold

The contrast between the availability of adverb extraction out of prenominal APs with short adjectives (37) and the unavailability of such extraction out of non-reduced (36b) and reduced

relative clauses (40), further suggests that BCS prenominal short adjectives should not be treated as reduced relative clauses.

Regarding adverb extraction out of direct modification source adjectives, the prediction here might be that if a language in principle allows adverb extraction from prenominal APs, extraction from direct modification AP would be possible since they are not reduced relative clauses. Since BCS long adjectives have been analyzed as either direct modification or reduced relative clauses in this model, we might expect that at least in some cases adverb extraction should be allowed out of APs with long adjectives. However, this is not borne out. As we have seen before, adverb extraction is not possible out of TAPs with long adjectives. Compare (37) with (41).

- (41) a. *Izuzetno_i su kupili [t_i skupi] automobil. (BCS)
 extremely are bought expensive.LF car
 cf. Kupili su izuzetno skupi automobil.
 ‘They bought the extremely expensive car/one of the extremely expensive cars.’
 b. *Užasno_i su kupili [t_i skupi/ružni] stan.
 terribly are bought expensive/ugly.LF apartment
 cf. Kupili su užasno skupi/ružni stan.
 ‘They bought the terribly expensive/ugly apartment.’

This indicates that APs with long adjectives are islands for adverb extraction. Nevertheless, this does not necessarily indicate that they are reduced relative clauses. In the previous section, I have provided evidence from the distribution of the long form that this form is never found in a predicative position in copular constructions (20b), a regular relative clause (26a), or a postnominal reduced relative clause (26c). Therefore, they are unlikely to occur in the predicative position only with prenominal reduced relative clauses. As discussed in Section 4.2, adverb extraction is blocked by a layer of functional structure present above AP with long adjectives.

Further evidence that reduced relative clauses are not available in the prenominal position in BCS and English comes from adjectives that are strictly predicative, as those in (42). Such adjectives in BCS only have a short form, which is the form typically used as a predicate.

- (42) a. On je voljan da pomogne. (BCS)
 he is willing.SF that helps
 ‘He is willing to help.’
 b. On je sam.
 he is alone.SF
 ‘He is alone.’
 c. The boy is present (spatial sense) / alone / asleep.

These adjectives are expected to occur in nominal phrases only as predicates in regular or reduced relative clauses under the dual source analysis, but not in the position of direct modification. As such they are expected to occur in the postnominal position and in the prenominal position preceding direct modification adjectives. Consider, however, the following distribution.

Strictly predicative adjectives in both BCS and English can occur in regular relative clauses.

- (43) a. Došao je svaki čovjek koji je bio voljan da pomogne. (BCS)
 come is every man who is been willing.SF that helps
 ‘Every man who was willing to help came.’
 b. Every boy who was present was singing.

They can also be used in the postnominal position, which is expected if postnominal adjectives are reduced relative clauses.

- (44) a. Došao je svaki čovjek voljan da pomogne. (BCS)
 come is every man willing.SF that helps
 ‘Every man willing to help came.’

- b. Every boy present was singing.

Given that such adjectives can occur in non-reduced relative clauses and postnominal reduced relative clauses, we would expect them to be able to occur in prenominal reduced relative clauses preceding direct modification adjectives as well. This, however, is not the case, as (45) shows.¹⁵

- (45) a. *Jedan sam (mali) dječak sjedi na stepenicama. (BCS)
 one alone.SF (little.LF) boy sits on stairs
 Intended: ‘A little boy who is alone is sitting on the stairs.’
 b. *On je uvijek bio jedan da pomogne voljan (pošteni) čovjek.
 he is always been one that helps willing.SF (honest.LF) man
 Intended: ‘He has always been an honest man willing to help.’
 c. *An alone little boy is sitting on the stairs.
 d. *Every present boy was singing.

These data suggest that a reduced relative clause source is not available in the prenominal position in BCS and English.

Finally, the interpretive properties of short adjectives also indicate that they cannot be (only) analyzed as reduced relative clauses. Recall that under the dual source analysis, reduced relative clauses are associated with temporary, restrictive, and intersective interpretation. However, the short adjective in (46a) is unambiguously non-intersective (i.e. this sentence is felicitous in a situation where all students (not just a subset) were cheerful), and the one in (46b) is interpreted as a permanent property (see also Despić and Sharvit (2011), who also discuss contexts where short adjectives are both intersective and non-intersective).

¹⁵ Cinque (2010: 59) notes that predicative adjectives with complements obligatorily extrapose just like full relative clauses. However, adjectives like *sam* ‘alone’ do not take complements, so it is less clear why their extraposition should be obligatory.

- (46) a. ?Naši véseli studenti završili su ispit za sat vremena. (BCS)
 our cheerful.SF students finished are exam for hour time
 ‘Our students, all of which were cheerful, finished the exam in an hour.’ (*non-intersect.*)
- b. Trenutno su nepristupačne neke inače plovne rijeke.
 at.the.moment are inaccessible some otherwise navigable.SF rivers
 ‘Some otherwise navigable rivers are inaccessible at the moment.’ (*permanent*)
 (Aljović 2000: 111)

Given (46), which indicates that the short form does not only yield interpretations associated with reduced relative clauses, the only way to capture this semantic ambiguity of short adjectives in the dual source analysis seems to be to assume that short adjectives are ambiguous between the two sources of modification, parallel to Cinque's proposal for long adjectives. However, treating both short and long adjectives as ambiguous between indirect modification (reduced relative clauses) and direct modification would completely undermine the claim that BCS overtly distinguishes between the two sources of adjectives because neither the long form nor the short form would then be reserved exclusively for marking one source.

In summary, we have seen that the dual source analysis of prenominal adjectives in BCS proposed by Cinque (2010) is problematic based on the interpretation, distribution, and extraction possibilities with adjectives. Crucially, interpretations that are associated with reduced relative clauses under this analysis are present in the context of adjectives that cannot be analyzed as reduced relative clauses based on their distribution (BCS long adjectives; BCS and English exclusively attributive adjectives). Similarly, interpretations associated with direct modification occur with adjectives that can only be reduced relative clauses in Cinque's system (BCS short adjectives). Finally, analyzing BCS prenominal short adjectives as reduced relative clauses would lead to a wrong prediction that extraction out of such phrases is not available. I have shown that

BCS disallows adverb extraction out of APs with short adjectives that are embedded in a non-reduced relative clause or a postnominal reduced relative clause. However, such extraction is possible out of APs with short adjectives that are not embedded in regular relative clauses, including APs in the prenominal position. This indicates that prenominal APs with short adjectives are not reduced relative clauses. BCS then turns out not to be a language that overtly distinguishes between direct and indirect modification source. Although it is possible that there are two syntactic sources of modification, these two sources are not associated with two different sets of interpretations of adjectives.¹⁶

4.4 *BCS long adjectives and specificity in the syntax, morphology, and prosody*

In this section I take a closer look at BCS attributive TAPs with long adjectives, which I have analyzed as XP_{APs} above, and discuss how they contribute to the specific readings that NPs with long adjectives get. I also discuss additional morphological and prosodic motivation for having additional functional structure with long adjectives, compared to TAPs with short adjectives.

It has been noted above that BCS long adjectives can only occur in the attributive position (see (6) and (20)). When it comes to the interpretation of NPs with adjectives, in traditional grammars the distinction between the long and the short form is considered to be a distinction between definite and indefinite “adjectival aspect”, and in some work in generative literature it has

¹⁶ As noted above, when a short and a long adjective co-occur in a prenominal position in BCS, the former must precede the latter. In Talić (2017), I give an intervention effect account of this, the gist of the account being that in **long A + short A + N* order, the short A induces a defective intervention effect for the feature-checking between the long and the noun for the specificity feature (although itself it does not have that feature).

also been treated as definite/indefinite distinction (see e.g. Leko 1988, 1998; Zlatić 1997; Progovac 1998). However, while some BCS NPs with long adjectives can be translated into English using a definite article, not all of them can. In this respect, Aljović (2000, 2002) argues that the semantic contrast between NPs with long adjectives and NPs with short adjectives is specificity (presupposition), rather than definiteness, as traditionally assumed (For relevant discussion on definiteness/specificity, see also Enç 1991; Ishane and Puskás 2001; von Heusinger 2002; Ionin 2006; Arsenijević and Stanković 2009; Guillemin 2011). She shows that short adjectives are only compatible with indefinite NPs, so they can be used after *jedan* ‘one’ (47a), but not after a demonstrative (47d); but long adjectives are compatible with both indefinite (47b) and definite NPs (47c).

- (47) a. *jedan poznat pjesnik* (BCS)
 one famous.SF poet
 ‘a famous poet’
 b. *jedan poznati pjesnik*
 one famous.LF poet
 ‘a famous poet’
 c. *taj poznati pjesnik*
 that famous.LF poet
 ‘that famous poet’
 d. **taj poznat pjesnik*
 that famous.SF poet
 ‘that famous poet’

Given that long adjectives occur in specific contexts, one might suggest that the specificity effect rather than additional functional projection in TAPs with long adjectives blocks adverb extraction in the context in question. However, as noted by Bošković (2012), BCS items like demonstratives, *some*, *every*, and possessives fail to induce specificity effects and, unlike such items in English,

allow stacking up. Thus, extraction of the PP in (48) is possible, despite the presence of elements that induce specificity/definiteness effect in English.

- (48) [O kojem piscu]_i je pročitao [svaku knjigu/ (tu) tvoju knjigu t_i]. (BCS)
 about which writer is read [every book / (that) yours book.
 cf. *About which writer did he read every book/that book of yours.
 (Bošković 2012: 198)

For this reason, BCS long adjectives are not necessarily expected to induce specificity effects either. In fact, they behave just like the items discussed by Bošković in both respects, and allow extraction of other elements out of the NP too (49a), and can co-occur with other items related to specific contexts (49b).

- (49) a. [Za koji problem]_i si pronašao pra:vo: rješenje t_i ? (BCS)
 for which problem are found right.LF solution
 ‘For which problem did you find the right solution?’
 b. Danas sam pročitala ovaj/svaki Amelin zanimljivi esej.
 today am read this/every Amela’s interesting.LF essay
 ‘I read this interesting essay of Amela’s today.’

Therefore, adverb extraction out of TAPs with long adjectives is not expected to be blocked due to specificity, and the unavailability of adverb extraction in such contexts needs a different explanation. If the locality-based account I have proposed above is on the right track, then it is the presence of additional functional structure in TAPs with long adjectives that blocks this extraction (Recall that the adverb, which is AP-adjoined, cannot extract because it must move to SpecXP_{AP}, which would violate anti-locality). Given that long adjectives are correlated with specific readings of BCS NPs (Aljović 2002), it is reasonable to propose that this functional layer, XP_{AP}, is projected

by the feature [+specific] and that the feature is realized by the long form inflectional piece. To see more clearly what the long form inflectional piece is, we need to take a closer look at prosodic differences between BCS long and short adjectives, which provide further support that long form adjectives have more structure than short form adjectives.

4.4.1 *Structure dependent tone in BCS adjectives*

In this section I examine more closely the prosody of BCS long and short adjectives and show that contrasts between the two forms also follow from a richer structure in the TAPs with long adjectives.

4.4.1.1 *Short vs. long adjective distinction – The pattern*

As discussed in Chapter 3, BCS is a pitch-accent language where prosodic words have prominent syllables with either a falling (50a-b) or a rising (50c-d) accent on long or short vowels.¹⁷

- | | | | |
|------|--------------------|--------------------------|--------------|
| (50) | <i>falling</i> | <i>rising</i> | |
| a. | mà:jka
'mother' | c. má:na
'flaw' | <i>long</i> |
| b. | màčka
'cat' | d. mática
'queen bee' | <i>short</i> |

¹⁷ I will use the following diacritic marking in the examples: [´] = rising accent; [`] = falling accent. [^H] indicates that a vowel has a lexical High tone in some examples.

Every vocabulary item in BCS (roots, prefixes, suffixes) comes with its own idiosyncratic accentual properties, as a result of which they are either inherently linked to a High tone or not. To understand the pattern to be introduced below, we need to keep in mind the following basic accent assignment rules that BCS employs: (i) In a word with multiple inherent High tones, the leftmost High tone is realized; (ii) If the winning High is not preceded by a vowel in the same prosodic word, it is realized as a falling accent; (iii) If the winning High is preceded by a vowel in the same prosodic word, it spreads to the preceding vowel giving it a rising accent (see e.g. Inkelas and Zec 1988).

Contemporary short/long adjective distinction is almost entirely prosodic (see Aljović 2000, 2002). Some dialects use the so-called *nominal declension* endings for agreement in the short form (*bijé:la konja* ‘white.ACC.SF horse’) and *pronominal declension* endings in the long form (*bijè:log konja* ‘white.ACC.LF horse’) in addition to the prosodic differences, with the nominal/pronominal distinction being present only in masculine and neuter singular contexts; while other dialects productively use only pronominal declension endings in both the long and the short form (*bijè:log konja* ‘white.ACC.SF horse’; *bijè:log konja* ‘white.ACC.LF horse’), except in nominative singular masculine and accusative singular masculine inanimate, where the short form has the ending $-\emptyset$ and the long form has the ending $-i^{18}$. I first focus on the latter variety, and return to the variety with two separate declensions in masculine and neuter singular below.

The prosodic differences between the two forms at first do not look systematic. In particular, as illustrated with pairs of adjectives in (51) and (52) (all of which are DAT.SG.F), if the short form has a rising tone it becomes a falling tone in the long form, as in (51a)-(52a), (51b)-(52b); if the

¹⁸ There are speakers who use both nominal declension and pronominal declension endings on short-form adjectives for whom this distinction is stylistic.

short form has a rising tone, it shifts one syllable to the left and remains a rising tone in the long form, as in (51c)-(52c); and the accentual difference is neutralized in (51d)-(52d).¹⁹

- (51) *short*: a. plá:vo:j b. glá:dno:j c. visóko:j d. làbavo:j
 (52) *long*: a. plà:vo:j b. glà:dno:j c. vísoko:j d. làbavo:j
 ‘blue’ ‘hungry’ ‘tall’ ‘loose’

Only NOM.SG.M (and ACC.SG.M.INANIM) has an overt inflection [-i] in the long form in addition to the prosodic contrast in the adjectival stem present in other cases:

- (53) *short*: glá:dan -**rising** tone on the 1st syllable
 long: glà:dn-i -**falling** tone on the 1st syllable
 ‘hungry-NOM.SG.M’

Focusing first on the prosodic contrast in (51)-(52), the agreement suffix [o^H:j] has an underlying High tone. This is indicated by the rising tone on the vowel preceding it in (51a,b,c), which is a result of High tone spreading from [o^H:j]. In contrast, the High tone of the agreement suffix is not realized in (52a,b,c), so the vowel immediately preceding it does not have a rising tone in these cases. Instead, the vowel preceding [o^H:j] behaves as if it has its own High tone. This is indicated by a falling tone on the vowel preceding [o^H:j] with monosyllabic stems in (52a,b), and by a rising tone on the initial syllable with a bisyllabic stem (52c). Finally, the contrast between the two forms is neutralized in the case where the stem itself has an underlying High tone, which precedes that

¹⁹ I am using DAT.SG.F forms here because the long vs. short distinction is neutralized with consonant-final case suffixes in all genders and with genitive feminine vowel-final suffix. For complete paradigms, see the Appendix (Section 4.6). Crucially, the main prosodic difference in the adjectival stem in the two forms is the same in all cases, so it suffices to illustrate it with just the dative.

of the suffix. Hence, even in the short form, High tone spreading cannot take place, and both forms have an initial falling tone.

Given that this prosodic contrast marks the short/long form distinction in the most contexts, I take it to be the primary difference and for the moment put aside [-i] which occurs only in one context in addition to the prosodic differences. Descriptively, the whole pattern in (51)-(52) can be captured by assuming that there is a High tone between the adjectival stem and the agreement suffix in the long form that is absent in the short form. This raises the question of where this High tone comes from. Crucially, we have seen above that another difference between long and short form of adjectives is that phrases they project have different amount of structure. While short adjectives project bare APs and allow adverb extraction (10a), long adjectives have a functional projection above AP that blocks adverb extraction (10b). Given that having an extra High tone, having an extra feature (specificity), and having extra structure are all characteristics of the long form, it is reasonable to suggest that this extra High tone is actually the exponent realizing the functional head X_{AP} . In particular, I take the vocabulary item realizing the specificity feature on the functional head X_{AP} in the complex adjectival head to be a phonemically null item with a High tone.²⁰

(54) [SPEC] $\rightarrow \emptyset^H$

²⁰ Bošković and Hsieh (2013) observe that in languages that lack DP, which is the locus of definiteness/specificity, the definiteness feature often surfaces on non-typical elements due to the lack of DP (with other elements taking over the function of introducing definiteness). As discussed in Bošković and Hsieh (2013), one such case is found in Mandarin Chinese, where definiteness is marked on a plural marker, i.e. the plural suffix *-men* contributes both [plural] and [definite] feature. The specificity feature found in BCS adjectives can be looked at as another case of this kind (definiteness/specificity on a “wrong” element due to the lack of DP).

This High tone is not inherently linked to a vowel, so it links to the first vowel immediately preceding it, i.e. the final vowel of the adjectival stem. If the stem is monosyllabic, this results in a falling initial accent, as in (55).

- (55) a. plā:v- ø^H- o^H:j
 A- X- DAT.SG.F
 'blue'
- b. glā:dn- ø^H- o^H:j
 A- X- DAT.SG.F
 'hungry'

If the adjectival stem is polysyllabic (and toneless), the High tone links to the final vowel of the stem again, and it spreads further to the vowel preceding it, giving it a rising accent, as in (56).

- (56) vísok- ø^H- o^H:j
 A- X- DAT.SG.F
 'tall'

Regardless of the presence of the High tone realizing X_{Ap} after an adjectival stem with an inherent High tone, the High tone of the stem is realized as the leftmost High tone in the sequence. This results in a falling accent if the stem has an initial High tone (57a), or in a rising accent if the stem has a non-initial High tone (57b).

- (57) a. lā^Hbav- ø^H- o^H:j
 A- X- DAT.SG.F
 'loose'
- b. már^Hljī^Hv- ø^H- o^H:j
 A- X- DAT.SG.F
 'diligent'

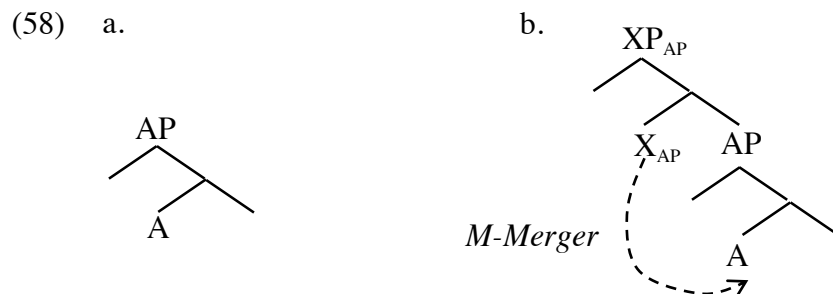
Having introduced the linear order in which the morphemes occur in the complex adjectival head, I now turn to the details of the structure.

4.4.1.2 *TAPs in the syntax and in PF*

Regarding the structure of the adjectival head, I follow Distributed Morphology (DM) style approaches (e.g. Halle & Marantz 1993; Embick & Noyer 2007), where words are (for the most part) assembled by the syntax. Assuming the syntax provides input to PF and LF, elements that are present in the syntax are expected to have semantic and/or syntactic reflexes. On the other hand, elements that have neither semantic nor syntactic effect can be introduced in PF, as argued for agreement nodes (Embick & Noyer 2007). The paradigm above suggests that complex adjectival heads are partially assembled in the syntax and partially in PF.

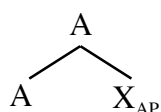
The prosodic contrast discussed above indicates that the functional head X_{AP} is placed between the adjectival stem and the agreement suffix because it disrupts the interaction between the High tone on the agreement suffix and the adjectival stem. Recall that a toneless adjectival stem preceding an agreement morpheme in the short form gets a rising accent (51a,b,c), indicating that the High tone spreads from the agreement morpheme to the final vowel of the adjectival stem. However, this High-tone spreading is not possible in the long form due to the presence of the additional High tone between the agreement suffix and the stem, so the adjectival stem gets different prosody in such cases (52a,b,c). This order of morphemes (A-X-AGR) in the long form results from the adjectival structure projected in the syntax and from nodes inserted in PF that have no semantic or syntactic effect. In particular, the adjectival stem (A) projects AP with both short

and long adjectives (58a-b). The functional head X_{AP} projects XP_{AP} above AP in the long form (58b), but not in the short form (58a). As discussed above, the presence of the functional layer above AP with long adjectives in the syntax is supported by the blocking effect it has on adverb extraction (10b). The syntax then sends the following structures to PF.



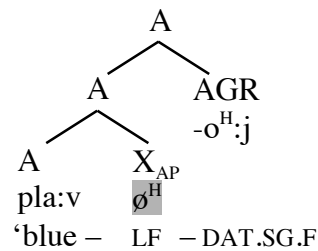
In PF, the functional head X_{AP} lowers to the adjectival stem and yields the partial morphological structure of the long adjective in (59). The lowering can take place by M-merger (Marantz 1984; Bobaljik 1995).

(59) *Long adjective after M-merger:*



Morphemes marking agreement of the adjective with the noun do not have a semantic or syntactic effect. I hence assume that they are inserted in PF. The final structure of the complex long adjectival head after Vocabulary Insertion is given in (60):

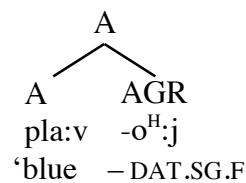
(60) *Long adjective with AGR:*



Given that the adjectival stem and the functional head X are assembled before the agreement node is introduced, this structure captures the fact that the interaction between the High tone of the agreement suffix and the final vowel of the adjectival stem is disrupted with long adjectives.

With short adjectives, the functional projection XP_{AP} is not projected. The agreement node is then attached directly to the adjectival stem in PF, as in (61). With toneless adjectival stems, the first and only High tone is the High tone of the agreement suffix. Thus, the High tone can spread to the final vowel of the adjectival stem, giving it a rising accent.

(61) *Short adjective with AGR:*



Thus, the difference between long and short adjectives is that the agreement node is not immediately adjacent to the adjectival stem in long adjectives, but it is immediately adjacent to it in short adjectives. Once accent assignment rules apply, the two forms look different because of the additional High tone in the long form between the adjectival stem and the agreement suffix. This then automatically captures the whole pattern of accentual contrasts in (51)-(52).

4.4.1.3 A case of contextual allomorphy

In this section I return to the suffix [-i] that occurs in NOM.SG.M in addition to the prosodic contrast discussed above. Given that prosody marks the distinction between the long and the short form in most cases, including when [-i] is present, I have argued above that a High tone is the primary exponent for the long form inflection realizing the functional head X_{AP} . The remaining questions are what the suffix [-i] marks and why it occurs in the long form and not in the short form.

In DM, rules of exponence can refer to a structural context under which a particular vocabulary item is inserted to realize some grammatical feature(s). In this respect, I suggest that [-i] is an exponent for agreement that is inserted in the presence of a functional head in the adjectival complex. More precisely, NOM.SG.M has two exponents:

- (62) a. NOM.SG.M \rightarrow [- \emptyset^H] / {N,A}____
 b. NOM.SG.M \rightarrow [-i]

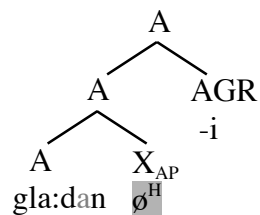
The exponent in (62a) is specified to occur in the environment of N or A (i.e. only when it follows a lexical stem N or A)²¹, while the exponent in (62b) can occur in any environment (i.e. when AGR is separated from the lexical stem N or A by a functional head, e.g. X_{AP}). The choice between them in NOM.SG.M is determined by The Elsewhere Condition (Kiparsky 1973), so (62a) occurs in the short form and (62b) in the long form. Thus, while [-i] is not the primary exponent for the long form inflection, this suffix still occurs only in the presence of a functional head due to the contexts

²¹ The example in (i) contains both a short adjective and a noun with the agreement exponent in (62a):

(i) lijep- \emptyset^H grad- \emptyset^H
 beautiful-NOM.SG.M city-NOM.SG.M

specified in (62a-b), and can be considered a secondary exponent for the long form in NOM.SG.M, indirectly indicating the presence of a functional head indirectly due to the contexts in which it is inserted.

(63)



This suggestion is supported by the fact that [-i] does not occur only to distinguish long from short adjectives. Specifically, we also find [-i] in comparatives and superlatives, which are usually claimed to have the long adjectival form. However, the distribution of long adjectives and comparatives/superlatives suggests that comparatives and superlatives are not long form adjectives. Crucially, while long adjectives do not occur in the predicative position (64a), comparatives and superlatives do (64b-c).

- (64) a. *Mak Dizdar je poznat-**i**.
 Mak Dizdar is famous.LF-AGR
 Intended: ‘Mak Dizdar is famous.’
- b. Mak Dizdar je poznatij-**i** od Abdulaha Sidrana.
 Mak Dizdar is famous.CMPR-AGR than Abdulah Sidran
 ‘Mak Dizdar is more famous than Abdulah Sidran.’
- c. Mak Dizdar je naj-poznatij-**i** od svih
 Mak Dizdar is most-famous.CMPR-AGR of all
 bosanskih pjesnika.
 Bosnian poets
 ‘Mak Dizdar is the most famous of all Bosnian poets.’

If comparatives and superlatives are not long form adjectives, a question arises why they get the suffix [-i]. I suggest that they provide the environment for the insertion of [-i] which is chosen in the presence of a functional projection. This is precisely what is expected under Bobaljik's (2012) Containment Hypothesis, where the comparative projects a functional layer above the adjective and the superlative projects a functional layer above the comparative. Crucially, although the functional projections in comparatives/superlatives are not projected by the same functional head as the functional projection in long adjectives, they still provide a context for the insertion of the [-i] allomorph for agreement in NOM.SG.M.

4.4.1.4 *Nominal vs. pronominal declension endings*

I have mentioned earlier that in some varieties short and long adjectives have two different sets of suffixes in masculine and neuter gender (so called *nominal* and *pronominal* declension; see Table 1), while just like before, the feminine gender has only one set of suffixes for nouns, pronouns, and adjectives (see Table 2). Furthermore, some speakers who use pronominal declension endings for short form adjectives productively as in the variety discussed above and make a distinction between the two forms primarily by prosody also sometimes use nominal declension endings for short form adjectives for stylistic reasons.

Table 1: <i>nov šešir</i> ('new hat'-masculine.sg)					
	Pronominal Declension			Nominal Declension	
	PRN	Clitic	Adj.long	Adj.short	Noun.M
N	on	<i>pro</i>	nòv - i	nòv	šešir
G	nj-e- g - a	g - a	nòv-o:- g	nóv - a	šešir- a
D	nj-e- m - u	m - u	nòv-o:- m	nóv - u	šešir- u
A	nj-e- g - a	g - a	nòv - i [inanimate] nòv-o:- g [animate]	nòv [inanimate] nóv - a [animate]	šešir
I	nj- i:m	-	nòv- i:m	nóv - i:m ²²	šešir-o- m
L	nj-e- m - u	-	nòv-o:- m	nóv - u	šešir- u

Table 2: <i>nova haljina</i> ('new dress'-feminine.sg)					
	Pronominal Declension				
	PRN	Clitic	Adj.short	Adj.long	Noun.F
N	on - a	<i>pro</i>	nóv - a	nòv - a:	haljin - a
G	nj - e:	j - e:	nóv - e:	nòv - e:	haljin - e:
D	nj-o:- j	j-o:- j	nóv - o:- j	nòv - o:- j	haljin - i
A	nj- u	j-e/j- u	nóv - u	nòv - u:	haljin - u
I	nj-o:- m	-	nóv - o:- m	nòv - o:- m	haljin - o:- m
L	nj-o:- j	-	nóv - o:- j	nòv - o:- j	haljin - i

Questions that the existence of these different varieties raise are: How could we capture these differences between different varieties? Are the exponents for the functional projection X_{AP} proposed above overt suffixes rather than a null element with a High tone in those varieties that use suffixes from both nominal and pronominal declension on adjectives.

I propose that the exponent for the functional projection in the adjectival domain in long form adjectives is the same in all varieties, i.e. that the vocabulary item realizing X_{AP} is \emptyset^H everywhere. Furthermore, I argue that the two sets of suffixes in masculine and neuter gender for short and long adjectives are agreement endings specified to be inserted in different environments. Crucially, even in varieties that use nominal endings for short adjectives and pronominal endings for long adjectives, there are still prosodic differences in the adjectival stems in addition to that. Consider the following examples from Riđanović (2012:488) (All forms are GEN.M.SG):

²² There is no separate form for instrumental in the nominal declension of adjectives.

(65)	<i>Nom Decl SF</i>	<i>Prn Decl SF</i>	<i>Prn Decl LF</i>
a.	crvén-a ^H red.SF	crvén-o ^H :g red.SF	crve ^H n-o ^H :g red.LF
b.	zelén-a ^H green.SF	zelén-o ^H :g green.SF	zéle ^H no ^H :g green.LF
c.	dúg-a ^H long.SF	dúg-o ^H :g long.SF	dù ^H go ^H :g long.LF

Notice that the adjectival stems in the short forms with a nominal declension ending have the same prosody as the stems in the short forms with a pronominal declension ending, and that the final vowel of the stem in the long form has one extra High tone that is missing in both short forms. Therefore, the crucial property that separates long adjectives from short adjectives is there even in the variety that uses nominal endings in the short form.

When it comes to what the suffixes on adjectives are exponents of, I suggest that both nominal and pronominal declension endings are merely different allomorphs of case, number, and gender markers (i.e. agreement with the noun adjectives), which are realized in different environments. First, in varieties that use nominal declension endings on short adjectives, for GEN.M.SG we have the following vocabulary insertion rules:

- (66) a. GEN.M.SG --> -a/ {N, A}____
b. GEN.M.SG --> -o:g/ elsewhere

The rules in (66) ensure that the suffix *-a* is inserted for GEN.M.SG only when it is immediately adjacent to a nominal or adjectival stem, while the suffix *-o:g* is inserted in all other contexts, including when the agreement node on the adjective is separated from the adjectival stem by a functional head X_{AP} .

In contrast, speakers who only use pronominal declension endings on adjectives (long and short) productively, have the following vocabulary insertion rules:

- (67) a. GEN.M.SG --> -a/ N____
b. GEN.M.SG --> -o:g/ elsewhere

The rules in (67) allow the nominal declension endings to be inserted only after the nominal stem, while pronominal declension endings occur in all other contexts, including short and long adjectives.

Finally, the speakers who only use nominal declension suffixes on short adjectives for stylistic reasons may also have rules similar to (66), where the context for using nominal declension endings after an adjectival stem may be further specified for the particular style. Alternatively, such speakers may just be code-switching into the variety that has the rules in (66) when they want to convey that particular style, although they use the rules in (67) in neutral contexts.

In sum, by looking at prosodic and morphological differences between BCS long and short adjectives, we see that there is a strong reason to assume that TAPs with long adjectives have an additional functional head. The overt reflex of this functional head is a High tone that appears on the final vowels of the adjectival stem in long adjectives.

4.5 Conclusion

In this chapter, I have discussed the amount of structure projected by TAPs in the attributive position. I have argued that such TAPs are generally more complex than TAPs in the predicative position in that they have a functional projection even in languages that in principle allow bare APs. The only situation when this is not the case concerns languages that have different attributive and predicative adjectival forms, if they allow the latter to be used (in some cases) in attributive positions. One piece of evidence for this comes from adverb extraction. Crucially, in languages that in principle allow bare APs such extraction is possible out of predicative TAPs, but it is typically blocked from attributive TAPs. However, languages that can use the predicative form of adjectives in the attributive position allow adverb extraction out of TAPs with this adjectival form. That is, in the absence of morphology associated specifically with the attributive position, such languages (namely BCS and Icelandic) have bare APs even prenominally. Thus, I have established the following new generalization regarding adverb extraction out of attributive TAPs:

(68) *Adverb Extraction Generalization (Attributive TAPs):*

Adverb extraction out of attributive TAPs is allowed in languages without articles and languages with affixal articles only if they have separate forms of adjectives for attributive and predicative position and if the latter can be used in the attributive position.

I have also discussed a puzzle in Icelandic, which disallows LBE out of DPs but allows adverb extraction out of attributive TAPs within those DPs, suggesting an analysis where elements which have to agree within TNP cannot move out of TNP, while non-agreeing elements can.

I have also discussed in more detail two adjectival forms in BCS. First, the findings about adverb extraction, where it is possible to extract an adverb out of TAPs with short adjectives in the

prenominal position, but not out of TAPs with long adjectives, have led me to discuss the consequences of the data discussed in this Chapter for Cinque's (2010) analysis of BCS long and short adjectives. Crucially, while Cinque treats these two forms of adjectives as an overt manifestation of his direct and indirect modification source (APs in specifiers of functional projections and reduced relative clauses, respectively), I have provided arguments from the distribution, interpretation, ordering of TNP-internal adjectives, and extraction that this cannot be correct.

Finally, I have discussed semantic, morphological, and prosodic properties of BCS long and short adjectives, providing independent support (i.e. independent of adverb extraction) that long form adjectives, which occur only in the attributive position, have more structure than short adjectives, which typically appear in the predicative position, but are sometimes also found in the attributive position.

4.6 Appendix: Full paradigm for short vs. long adjectives

Masculine declension

N	<i>short</i>	plà:v	glá:dan	vísok	làbav
	<i>long</i>	plà:vi:	glà:dni:	vísoki:	làbavi:
G	<i>short</i>	plá:vo:g	glá:dno:g	visóko:g	làbavo:g
	<i>long</i>	plà:vo:g	glà:dno:g	vísoko:g	làbavo:g
D	<i>short</i>	plá:vo:m	glá:dno:m	visóko:m	làbavo:m
	<i>long</i>	plà:vo:m	glà:dno:m	vísoko:m	làbavo:m
A	<i>short</i>	plá:vo:g	glá:dno:g	visóko:g	làbavo:g
	<i>long</i>	plà:vo:g	glà:dno:g	vísoko:g	làbavo:g
I	<i>short</i>	plá:vi:m	glá:dni:m	visóki:m	làbavi:m
	<i>long</i>	plà:vi:m	glà:dni:m	vísoki:m	làbavi:m
L	<i>short</i>	plá:vo:m	glá:dno:m	visóko:m	làbavo:m
	<i>long</i>	plá:vo:m	glà:dno:m	vísoko:m	làbavo:m
<i>adjective</i>		‘blue’	‘hungry’	‘tall’	‘loose’

Feminine declension

N	<i>short</i>	plá:va	glá:dna	visóka	làbava
	<i>long</i>	plà:va:	glà:dna:	vísoka:	làbava:
G	<i>short</i>	plá:ve:	glá:dne:	visóke:	làbave:
	<i>long</i>	plà:ve:	glà:dne:	vísoke:	làbave:
D	<i>short</i>	plá:vo:j	glá:dno:j	visóko:j	làbavo:j
	<i>long</i>	plà:vo:j	glà:dno:j	vísoko:j	làbavo:j
A	<i>short</i>	plá:vu	glá:dnu	visóku	làbavu
	<i>long</i>	plà:vu:	glà:dnu:	vísoku:	làbavu:
I	<i>short</i>	plá:vo:m	glá:dno:m	visóko:m	làbavo:m
	<i>long</i>	plà:vo:m	glà:dno:m	vísoko:m	làbavo:m
L	<i>short</i>	plá:vo:j	glá:dno:j	visóko:j	làbavo:j
	<i>long</i>	plá:vo:j	glà:dno:j	vísoko:j	làbavo:j
<i>adjective</i>		‘blue’	‘hungry’	‘tall’	‘loose’

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